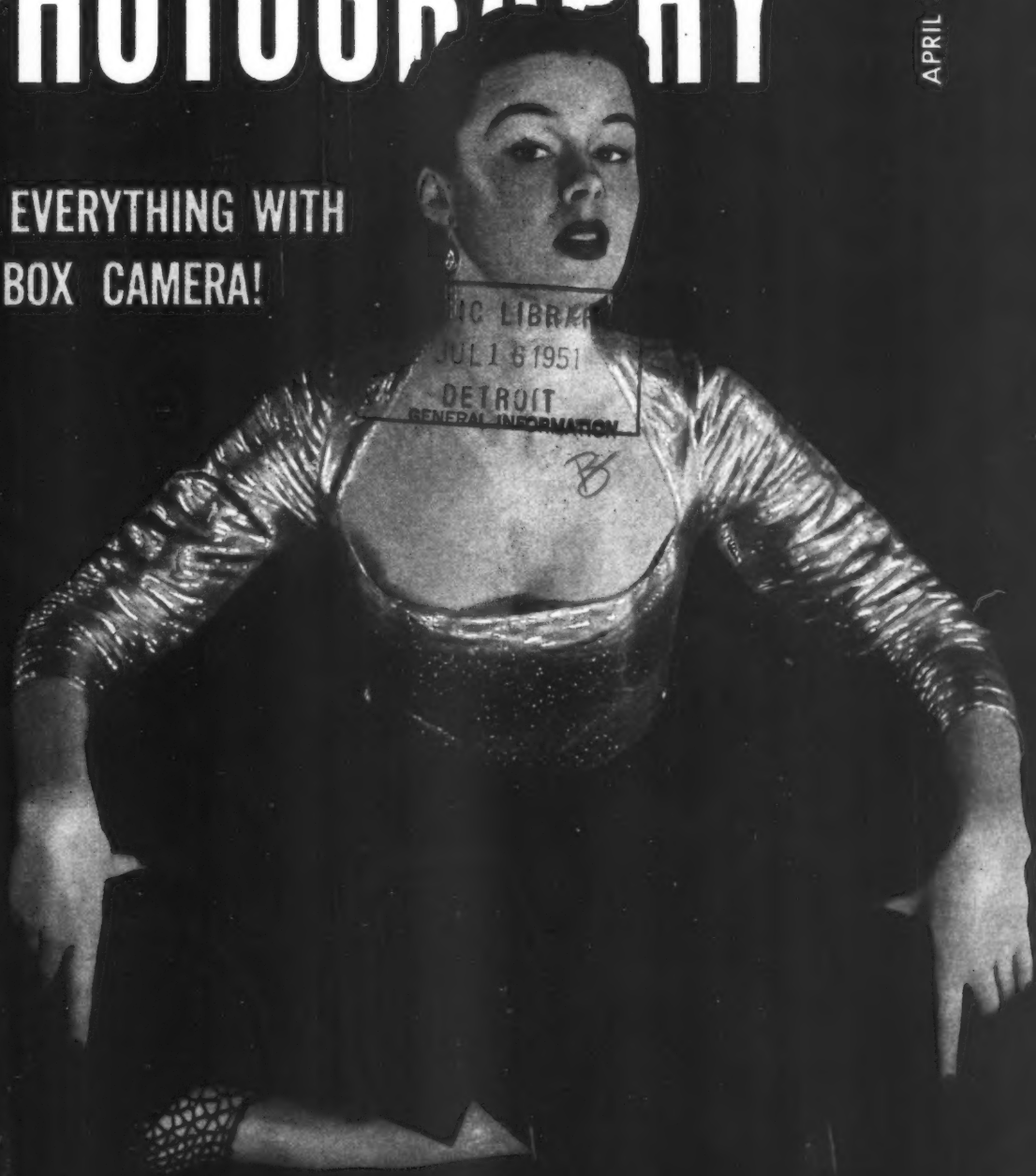


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For any photographer, catching the fleeting beauty of spring is a natural challenge. No better film was ever devised to meet it than dependable, fine grained Ansco Supreme.

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Yes, Ansco Supreme is the *supreme*

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A Division of General Aniline & Film Corporation. "*From Research to Reality.*"

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EDWARD WESTON

by Brett Weston

Photographers everywhere are finding in the Polaroid picture-in-a-minute camera a powerful new medium for artistic expression.

In brilliance of highlights and depth of shadows, the new black and white film gives results that challenge comparison with expert darkroom production. Polaroid's new Type 41 film represents other important advances. Contrast can be controlled simply by changing the development time in the camera. Prints are completely dry the instant they come from the camera, ready immediately to frame or mount.

Polaroid picture-in-a-minute photography now has all the features of ordinary photography plus the reward of seeing your

Q. *What story lies behind this picture?*

A. A story of a great new stride in photography. This unretouched photograph was reproduced directly from Mr. Brett Weston's original $3\frac{1}{4} \times 4\frac{1}{4}$ print made with Polaroid Type 41 black and white film. Taken indoors with naturally diffused light. Exposure: 2 seconds at shutter setting #7.



Brett Weston

pictures as you take them. Here is photography as it *should* be . . . free from the technical barriers between you and the picture you are creating. Like a painter or a sculptor, you *see* what you are creating *as you create it* . . . produce *better* pictures by seeing how to *take* better pictures.

Whether you are an amateur or a professional . . . beginner or salon exhibitor, visit your dealer and arrange to try this new kind of photography free, at our risk, in your own home or studio.

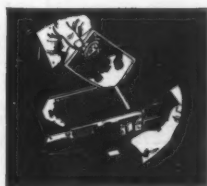
For new free booklet, "Thirty-eight ways to make the most of 60 second photography," write Polaroid Corporation, Dept. MP-4, Cambridge, Massachusetts.

Polaroid © by Polaroid Corporation

POLAROID *Land* CAMERA



SNAP IT! A single setting adjusts both lens and shutter speed. Simply focus, aim, snap! It's easier than most cameras. Then pull a paper tab and . . .



SEE IT! Sixty seconds later lift out your beautiful black-and-white print ($3\frac{1}{4} \times 4\frac{1}{4}$). No tanks. No liquids. Film and camera do it all.



ENJOY IT! There's no thrill like seeing your pictures *on the spot* at the very moment they mean the most, while everyone is there to share the fun.



ENLARGE IT! Copy negatives for darkroom use are available for only 15¢ through your camera store. From these you can make your enlargements.

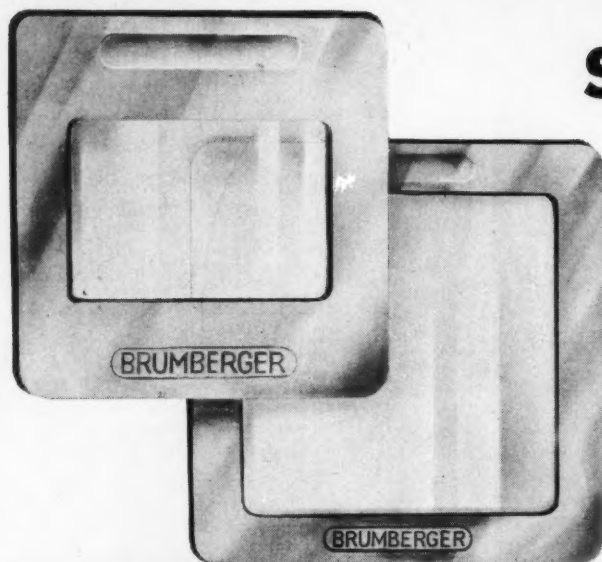


SHOW IT! You will be amazed at the fine quality of enlargements from Polaroid originals. (Your camera store will also make enlargements for you.)

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PROTECT YOUR VALUABLE SLIDES!



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Rigid, non-warp frame. Protects against finger prints, scratches, dust. Rounded edges for easy insertion into viewer or projector. May be used over and over—simple snap assembly.

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Minox Film, Color.....\$1.25 roll

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Precision made by one of Germany's leading manufacturers of roll film holders. *You will easily recognize the manufacturer of this fine 120 roll film holder for 6x9cm or 9x12cm which gives either 8 pictures 2 1/4 x 3 1/4 or 12 pictures 2 1/4 x 2 1/4.

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Here are a few of the many fine bargains that we offer in slide file boxes. Write for descriptive literature. All prices are f.o.b. our store.

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We have just imported the famous Hakosyn Synchronizing unit that easily attaches to the top of the Leica Camera and will offer positive synchronization for either Flash Bulbs or Strobe Units. This fine unit sells for \$19.95 and since we are importing them ourselves we are able to offer them to you at a savings.

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Kalart Compak Flash unit for use with the Hakosyn... 8.95

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Hakosyn (Note: in ordering please specify what model of Leica Camera you own.)



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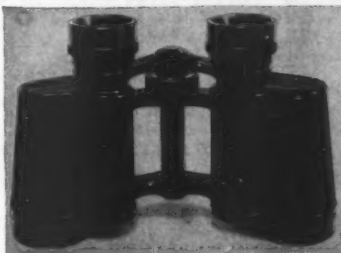
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APRIL 1951

VOL. 15, NO. 4

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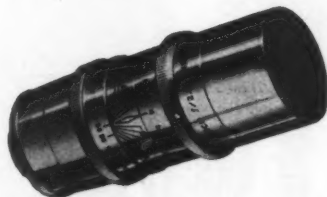


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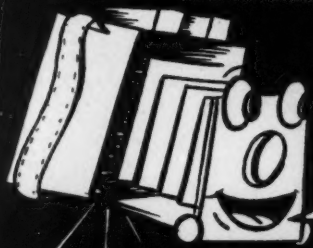
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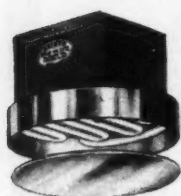
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the last word

letters from
our readers

One-Light Copying

Sirs:

Steven Nyi's article on one-light copying (*Short Exposures*, Dec. 1950 issue) came in handy the night my wife finished a pastel painting that I wanted to copy. When one of my two



remaining photofloods burned out, I tried making four exposures of the painting on a negative by placing the flood at a 45° angle on the right side of the painting for two exposures, and then moving it to the left side for two more. All exposures were made with a Century Graphic, 1/50 at f/11. New Orleans, La. James McIndoe

More About Infra Red Materials

Sirs:

In his fine article on infra red materials and instruments (*What's Ahead?*, Feb. 1951 issue), author Lloyd Varden neglected to mention that such materials are available to the photographer. We can supply special infra red sensitive phosphors in experimental quantities, and for those interested in learning more about this subject we offer an eight-page catalogue priced at ten cents. In addition to a description of the infra red materials available, this catalogue contains two articles on infra red photography. Precise Measurements Co. 942 Kings Highway Harold Pallatz Brooklyn 23, N. Y.

Less Technical Gobbledegook

Sirs:

A suggestion I would like to make to advertisers of speedlights is that they describe the light output in terms understandable to everyone. So many lumen seconds is gobbledegook, especially to amateurs. If the light output was advertised as "equal to a No. 5 flashbulb", or whatever it might be, buyers of a particular speedlight would have some basis for judging the output of that individual unit. Azusa, Calif. E. E. McGuire

• Sure and begorra, we agree with you, McGuire! Let us know if you think "Strobe for the Amateur" on page 34 is more down to earth in its terminology.—Ed.

Sisters, Sweethearts, and Wives

Sirs:

Your article called "Studio Lighting for \$12.05" (Jan. issue) was swell, but I think the boys went a little overboard. My portrait lights, consisting of two #2 photofloods in clamp-on reflectors, cost only \$3.64. And although a third light for backlighting might be a help, the results I get are pleasing with just two lights. Savannah, Ga. R. S. Waters

• Nothing pleases us more than being swamped with pictures after an article like "\$12.05 Studio Lighting" scores a bull's-eye. Here are a few pictures from readers that we did not have room for in "I Tried It Myself" on page 42.—Ed.

Sirs:

I followed the technique described in "Studio Lighting" closely except that



I handheld my Rollei for an exposure of 1/50 sec. at f/4.5. Teaneck, N. J. Francis Lynch

Sirs:

Using the lighting setup described in "\$12.05 Studio Lighting," and my sister Julie as a model, I discovered with amazement that my portraits were no



longer simply snaps but pictures with personality. Ciro-flex, Super XX, 1/50 at f/4.5. Los Angeles, Calif. Bob Tamkin

Sirs:

This pose and lighting setup were a new experiment with me. I think I could have improved these results with (Continued on page 12)

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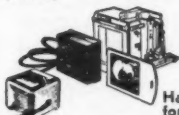
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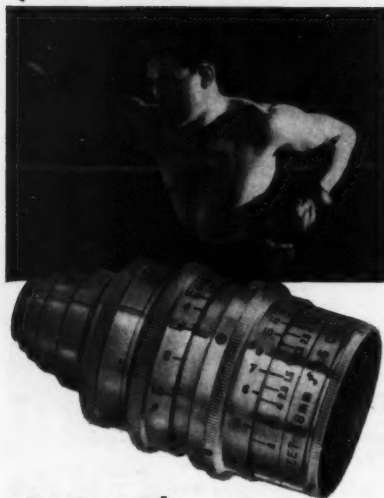
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letters from
our readers

(Continued from page 10)
the background further away, and with the camera far enough away from



the model to avoid distortion of the arms and hands.
Cloverport, Ky.

H. A. Blake

Sirs:

Portrait lighting was a mystery until I read "Studio Lighting," but now I feel I can go ahead with it with a clear idea of what I am doing. Here is my latest attempt, shot at 1/25 sec. at



f/5.6 on Super Pan Press. Incidentally, the cover of an old billiard table makes a swell background if one side is painted aluminum and the other side is left green.

New York, N. Y.

Larry Cornwell

Home-study Courses for G.I.'s?

Sirs:

I don't suppose you especially enjoy participating in other people's troubles, but judging from the articles and editorials in MODERN you are certainly interested in giving the amateur a helping hand in any way you can. My problem is this: I want to obtain photographic training through a "Home-study" course by mail under the G.I. bill. Circumstances make it impossible for me to attend classes, but all the photo schools I write to say that they have no mail courses avail-

able under the Veterans Rights Provisions. Do you know of any school that does sponsor such courses?

McRoss, W. Virginia J. B. Brown

• Other G.I.'s have asked us about home-study courses and we're completely stumped. Can any of you folks shed light on this subject?—Ed.

That Man Klinefelter

• When citizen Klinefelter (American) of Norfolk, Virginia, assumed a crepe beard and a vodka breath for the letter and picture on page 32 of the Feb. issue, he started something. Most readers enjoyed Klinefelter's satire on Russian claims to having invented everything from gunpowder to photography, but a few either took him seriously or are kidding, too. Here are as many excerpts from readers' letters as we have room to print.—Ed.

Sirs:

Mr. Klinefelter really sent my blood pressure up. Regardless of what he claims for his so-called "democratic" USSR, my encyclopedia says that the first gun was made by a German Monk named Schwartz; the first pistol was made by an Italian named Vitelli; and in 1839, Jacques Daguerre (French) announced his photographic process. I believe in giving credit where credit is due; Mr. Klinefelter doesn't know what he is talking about and should keep his mouth shut—especially if he is leaning toward the USSR side.

Lewisburg, Tenn.

F. Bigham

Sirs:

That flat-nosed bullet Klinefelter is pretending to shoot is a fake, or else where does the reflected light on it come from? Besides, if he doesn't appreciate a camera any more than this, why doesn't he go back to Russia where they are forbidden?

Cody, Wyoming

N. Delaney

Sirs:

It occurs to me that we might profit more by Mr. Klinefelter's writings if he told us how he made such an interesting shot. Did he photograph the bullet from behind a pane of bulletproof glass? Certainly unless Russian bullets are slower than ours, this bullet will eventually have to reach the camera and film, destroying both.

Philadelphia, Pa.

A. J. Martinez

Sirs:

Mr. Klinefelter's biggest error was in pointing the gun in exactly the opposite direction it should have been pointed.

Troy, N. Y.

Philip Calhoun

• We can't ignore so many requests for the lowdown on how you made the picture, Klinefelter. How about it?

—Ed.



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behind the scenes

news of the
photo industry

Exit Professional Kodachrome

About June 1, Eastman Kodak will suspend the sale of Kodachrome Professional Sheet Film. The following factors were listed by Kodak as influencing the making of this decision:

Manpower and production capacity. This factor is particularly significant in view of present world conditions and the anticipated requirements for sensitized products of all kinds. More professional color sheet film can be produced by making one (Ektachrome) rather than two different reversal materials.

Product uniformity. Limiting production, testing, and research facilities to one product, rather than two, will tend to raise still higher the quality of the color film manufactured.

Ektachrome product improvement. Recent improvements in Ektachrome Film and in processing have made it a reversal color film of unsurpassed quality. Future research will be directed toward this one product and, there is every reason to believe, it will lead to possible further improvements.

Processing facilities. The growth in number and in wider geographical distribution of Ektachrome processing facilities now makes it possible to obtain prompt and efficient nearby processing of color film.

Radioactiveless Kodak

If you recently read in the newspapers that radioactive snow had fallen in Rochester and had wondered just how it would affect your color film then being processed by Eastman Kodak in that city, stop worrying. Kodak officials are a few steps ahead of you. They have announced that "extensive manufacturing controls and safeguards against this type of hazard" have been installed in all their plants.

Goodbye aluminum

One of the latest orders issued by the National Production Authority prohibits the use of aluminum in the manufacture of inexpensive fixed focus still cameras excluding the reflex type.

Analyzing the order in its present form, it would not materially affect the manufacture of most inexpensive cameras, providing substitutes are available. The bodies of many of the cameras covered by the order are made of plastic, or could be made from this material. Little aluminum is used in other parts.

Clean the contacts

Material shortages have already affected flashlamp manufacture. The lamps are now being made with very

little tin in the solder. Special care should be taken with these new lamps to clean the center contact to remove corrosion before using.

Lamps may become more scarce than they are at present because of large orders from the Armed Forces. Luckily, thirteen to fourteen times as many lamps are being manufactured today as were produced ten years ago. The story has been further brightened by the entry into the flashlamp manufacturing field of two more companies during 1950.

No higher excise tax

Many people expressed surprise when the administration recently proposed 25 percent excise taxes on items such as phonographs, radios, TV sets and refrigerators, while no mention was made of photographic equipment.

Actually, the bulk of such photo equipment has been subject to a 25 percent manufacturer's excise tax since before World War II. The new proposal merely brings phonographs, radios and the like into the same tax fold. Fortunately no further increase for photo equipment has been proposed.

The pendulum swings again

You've probably heard the 1930's called the era of the 35mm camera and the more recent times, the age of the twin lens reflex. That's pretty broad generalization, of course, but it is true that the period since the war has seen a tremendous increase in the use of the small reflex camera. A recent nationwide survey, however, indicates that the pendulum is about ready to swing more towards the 35mm again. Although there are really not enough facts to pin down the reason for the trend, one cause may be that 2¼ by 2¼-inch transparencies are more expensive to take and project than the 35mm size.

Polaroids on allocation

Polaroid cameras are now being shipped to dealers on an allocation basis because the demands for civilian and defense needs have made it impossible for the manufacturer to keep up with all orders. Polaroid Corp. is the first major camera manufacturer to take this step.

Company officials explained that camera production was being maintained at a high rate and shortages had not yet seriously interrupted production. They declared that all civilian orders for resale to industrial and educational users will take precedence over the regular allotments for resale to amateur photographers.—THE END



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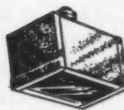
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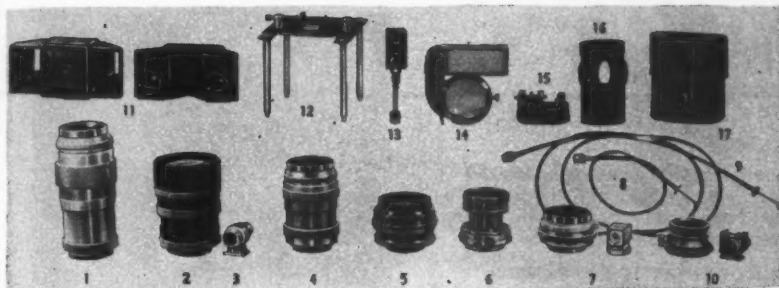
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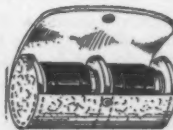
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COFFEE BREAK with the editors

OKAY—SO YOU'VE HEARD IT • • •

Leonard Lyons, a columnist in the *New York Post*, tells the story of one Stanley Tretick, a combat correspondent who has taken some darn good battle shots in Korea.

Seems Tretick was standing in a rice paddy in Korea waiting for a lift back to Tokyo. He saw a plane assigned to an admiral and approached the officer with the idea of a free hitch. The gold-braider stared at the begrimed Tretick and asked who he was. "I'm a photographer," answered Tretick.

"You don't look like a photographer," said the admiral. "Where's your camera?"

"You don't look like an admiral," rejoined Tretick. "Where's your boat?"

A FLASHY CHARACTER • • •

We were seated in Bud (Milton J.) Schwartz's office battling the breeze about "Strobe for the Amateur" (page 34) when a highly aggravated free lance photographer with a Rollei slung over his shoulder thundered in.

He finally found Bud hidden in a corner of the strobe unit filled room and brandished a strobe reflector under the nose of the man who had sold it to him.

"This lousy unit's no good," he roared. "It's got a loose wire somewhere. It works but the red charge lamp flickers on and off."

Bud shifted uncomfortably in his chair. He had just been telling us of the wonders of strobe. He asked in a low voice just how long the unit had been in use.

"O.K.," said the photographer in a much quieter voice, "so I've shot about 25,000 pictures with it and I'm still using the original strobe lamps and battery."

"Have you been giving the unit rough treatment?" asked Bud.



Bud Schwartz examines a client.

"Not especially. Of course I do a lot of work in the rain."

"Leave it and I'll fix it for you,"

soothed Bud. The photographer did so. After he had gone Bud turned to us and remarked: "As I was saying, strobe units are pretty sturdy."

PHOTOGRAPHY IS CATCHING • • •

Our art director, Ernie Scarfone, relaxes by painting watercolor landscapes—or he has up till now. For six months he has been looking at photographs, cropping photographs and arranging layouts for photographs. One day we caught him looking lovingly at our Ikoflex III. Then, he began asking questions about different cameras. One day we showed him a photograph which caused him to declare he could take a better one himself.

"But you're an art director, Ernie," we declared. "You can't take pictures."

"Oh, yeah," he replied, "that's what you think."

"Prove it," we taunted. The result? Ernie is awaiting delivery on a new Rolleicord. We imagine his paint brushes may get a bit stiff from disuse after he gets it.

COLOR ON THE DUMBWAITER • • •

Samuel Fass, author of "Making a Prize-Winning Movie" (page 78), is very particular about storing his color film. Since he usually keeps a good amount on hand, his ice-box is a bit too small for both food and film. As, even with an ardent photographer, food must come before film, he left the food in the ice-box and went in search of a new cache for the film. He made a methodical search of his entire house and found the ideal place—on the dumbwaiter. The walls were of stone, and air circulated freely from all four sides.

Fass does not suggest that every movie maker rush his film out to nearest dumbwaiter. An upstairs neighbor may be a movie fan. You can lose a lot of film that way—unless your dumbwaiter is abandoned as Fass's happens to be.

BEAUTY'S ONLY SNAKESKIN DEEP

After photographing action, close-ups, and color with his 20-year-old 2A box Brownie camera ("Can Your Box Camera Do Everything?", page 50), Chris Lecakes decided the old warhorse deserved an overhaul. He decided to recover it in red snakeskin, replace all the external metal parts with brass fittings and fit a brass nameplate to the front in recognition of its faithful service.

"O. K., so your camera will look like Yousuf Karsh's red, white and chromium view camera when you get through with it," declared Chris' wife, Pat, "but will it still take pictures as well as it did before you took it apart and glamorized it?"



Chris and old friend.

The result: The box Brownie is still covered with worn black leather, the metal surfaces are still scratched and dented—and the camera is still taking pictures.

FILM AND DODOS • • •

We don't know who first declared that something was as dead as a Dodo, but we do know that the Dodo was at one time very much alive. If one of these creatures, however, suddenly poked its nose in a movie photographer's face, he would be no more horrified than if he were offered 11.5mm film for his movie camera.

Didn't think there ever was any 11.5mm film, eh? Well, there was. As a matter of fact some of you who took up movie making in the wild and woolly days may remember 21mm film, 28mm film and 32mm film.

Those sizes are all about as dead as the Dodo now. They belong to photographic history and Jacob Deschin's story "Fifty Years of Amateur Movies" (see page 75).

NEW LIGHT ON LIGHT • • •

When Peter Gowland declared in "Studio Lighting for \$12.05?" (see January issue of MODERN) that he could do just about everything with a little over twelve bucks worth of lights, we were mightily impressed with his thriftiness. Since then however we have been deluged with mail from readers declaring that Gowland was pretty much of a spendthrift. We began a game, waiting to see just how inexpensively our readers thought studio lighting could be bought.

"Dear Sirs," began the winner, "I have been able to duplicate Gowland's pictures for \$2.35. . . ."

We still would feel safer with twelve bucks worth of lights but we congratulate our readers for the ingenuity.

SOME ENCHANTED MAPPING • • •

Ever since we first began making model releases available to our readers (Continued on page 20)

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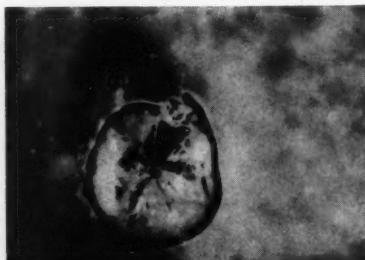
COFFEE BREAK

(Continued from page 18)

ers at twenty-five cents per pad, we've been receiving requests from Newark to the North Pole. The other day, however, we received a request which left us a bit puzzled. Four pads, however, were dutifully dispatched to a corporal in the map plotting division of the Army Engineers somewhere in the South Pacific. We'd just like to know what maps the corporal is photographing that are signing model releases.

WHEN A LEMON'S A LEMON . . .

Al Porte had never made a photograph. He had never used Farmer's Reducer and he had never solarized a picture. One day he decided to get it all out of his system at once. He took a piece of Tri-X 4 x 5 cut film and placed a slice of lemon on it. He exposed it to light, then developed it in DK-50. While the film was in the soup, he turned on the overhead light again, solarizing the negative.



The lemon, a slice of life.

When he took his film from the wash water, he found the negative too dense, so he reduced it with Farmer's and made a print. He then scratched his head and tried to figure out just what he could use it for. He brought it to MODERN. We scratched our heads. We didn't know what he could use it for either. So we are printing it.

A BIT MORE SOUP AND SCOPE . . .

Somewhere between the Managing Editor's desk and the printing press, a couple of lines fell out of the negative processing story, "In the Soup With Scope," which appeared in the March issue of MODERN.

After describing how the films were washed we should have included, "The films then get a brief wash in a solution of Kodak Photo-Flo. The 35mm films are swabbed down with a cellulose sponge; the 120 films get it with a windshield wiper squee-gee."

In case you were wondering how Scope negatives got dried, that's it.

THE WELCOME MAT IS OUT . . .

Lloyd Varden leads with his chin this month (Is Pictorialism Killing Photography? page 38) knowing he will be the sawdust in the beer of many pictorialists for years to come.

MODERN isn't taking sides in this or any other salon versus anti-salon controversy. We believe it is our duty to publish both sides of any dispute. Unfortunately, none of the champions of the salon have offered or agreed to write us a pro-salon article. The door is open and the welcome mat is out for any pictorialist who wants to answer Varden's criticisms. We promise that his story and illustrations will be handled fairly and squarely with no prejudices for or against his views.

HOW MANY IS ENOUGH? . . .

When we first asked Peter Gibbons to do a story on print mounting for us (How to Mount Your Prints, page 60), we told him we'd like to show the mounting processes step by step. He asked how many photographs we'd need. We shrugged our shoulders and told him to use his own judgment.

One month later, Mr. Gibbons returned with a bulky envelope. He spilled 144 prints on the desk and inquired whether we thought the number was sufficient. We did. We printed 15 of them, but the large number available made it easy to develop a concise picture story about print mounting.

IN NEXT MONTH'S ISSUE:

Film—Which film should you buy for which purpose? Do you really know the difference between Plus-X and Super-XX? Do you know which film to buy for a 35mm camera, what to use in a Rollei-flex? Here is the comprehensive story of films—all about their comparative sensitivities and uses.

Action with Floods—Did you always think that you had to stop high speed action with flash or strobe? Read the story of how famous studio photographer Muky gets high speed action, razor-sharp, using just floods. Then, you can, too.

Imogen Cunningham—In 1901 she bought a \$15 camera and started taking pictures. She still is. Now her photographs hang in museums—and her name is mentioned wherever portraiture is discussed. A biographical study with six pages of pictures in color and black and white.

Natural Light—Bradley Smith says that the sun doesn't have to shine over your shoulder into your subject's eyes to provide enough light for a good photograph. He tells you why and how in color and black and white.

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Are people compositions?

The 1950-1951 annual of the Royal Photographic Society of Great Britain includes a print by Francis Wu called "Vanity". It shows a young Chinese woman making up her eyebrows in an atmosphere of artfulness typical of the contemporary pictorial approach, that is, deliberate removal from the stream of life into a world that does not exist. But what annoyed me most was the commentator's statement: "It is unfortunate," he writes, "that the majority of contributions submitted to selectors in the sphere of portraiture are documentary in nature. They have little decorative merit and are usually photographs of individuals and nothing more. . . . We are not so much concerned here with the personality of the model, but rather are we attracted by the manner in which she has been associated with other elements to provide an interesting composition." (The italics are mine.)

In other words, portraits should be decorations and compositions; people are nothing but props in an arrangement; to reveal the personality of an individual is "unfortunate." Now turn, if you please, to Jacquelyn Judge's



Artist Chagall by Newman

piece on Arnold Newman (page 55) and note how this modern master of portraiture employs background not to decorate but to describe, to help explain rather than to submerge the personality of the subject portrayed.

How big should a print be?

The question of how large prints should be, particularly those intended for exhibition, comes up now and then, but is especially pertinent at this time,

when in addition to technical and aesthetic factors, there is the matter of increased paper cost. The latest word on the subject comes from Paul L. Anderson, author of a book on pictorial techniques and himself a pictorial worker of renown for more than forty years. He condemns the salonists for indulging "in a competition of size rather than of beauty".

Eight-by-ten or smaller should be big enough, he feels, declaring "that the ideal size range for photography lies between 4x5 and 8x10, with the generally best size closely in the neighborhood of 6½x8½ inches". Enlargement greater than 3½ or 4 diameters, he believes, "inevitably results in some loss of print quality" and handicaps the camera's unique ability to record with fidelity "the exquisite gradations of light on surfaces."

Is teaching a lost art?

Is there a "lost tradition" of teaching photography? Are we missing something the old-timers had but which has slipped away somehow? Could be. Got a glimpse of it the other day while judging a vocational high school show with Anton Bruehl, the famous photographer. He looked at the pictures a while, then said impulsively, "It's just bad teaching!" The technical quality was generally fairly good, but there was hardly an idea in the lot, nothing to show that the student had been encouraged to do anything more than turn out a technically good job. Bruehl said the teachers were to blame. I had said the same thing a year or so earlier and had had my ears pinned back for my pains.

"It was different at Clarence H. White's school," Bruehl recalled by way of pointing up what he meant. "White didn't teach us technique. He simply put a camera in your hand and asked you to bring back some pictures. The prints were then tacked on a wall and White walked around looking at them and asking questions, like 'Did you mean to do it this way?' or 'Is that what you wanted to get?' There were lots of faults, of course, and the questions made you wonder; they hit home like statements. So the next time you aimed the camera you thought a while before clicking the shutter debating whether, after all, that was "what you wanted." Bruehl doesn't recall ever having really studied technique, only to see photographically. To such effect, as everybody now knows, that he is today one of the world's leading photographers.—THE END

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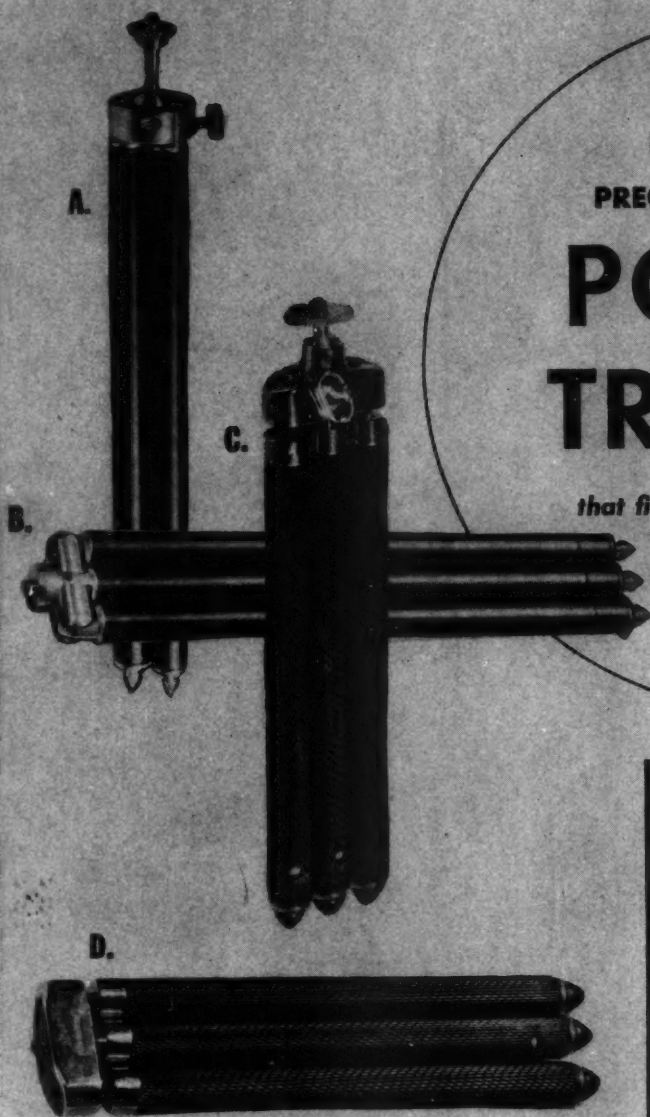
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What's Ahead?

by LLOYD E. VARDEN



Modern camera without lens

A few months ago I was shown a selection of black and white and color photographs, taken with a camera which the inventor's representatives described as unique in the picture-taking art. The camera had been developed by Renato Mosca in Italy. No details on its operation could be released at the time since the patents had yet to be issued. I was told, however, that even though *no lenses were used* in the camera, the images formed were free from astigmatism, chromatic aberration, and distortion, and the depth of field ranged from about one foot to infinity.

The pictures were fairly good amateur examples. They were reasonably sharp, but not critically so. Enlargements up to 8x10 inches from 35mm negatives were, nevertheless, quite acceptable. The depth of field was indeed amazingly wide, not unlike the recent Rolleiflex shots that we have all seen, which are made possible by a special $f/72$ diaphragm stop. Even self-portraits were included among the examples. These had been made by holding the camera at arm's length and framing one's own image in a novel mirror view finder mounted on the front of the camera.

Operational details now disclosed

There was no need to speculate as to how the camera worked, but several conventional possibilities came to mind. None of these, however, could be considered "unique" and patentable in a basic sense. I eagerly awaited the issuance of the first Mosca patent, U.S.P. 2,531,783. This patent gives a full description of the camera, and it is obvious now that the initial mystery surrounding its method of operation was somewhat unjustified. None the less, the camera has several innovations worthy of attention.

A schematic drawing of the camera is shown at the right. Spherical concave and convex mirrors are used to form the image on the film plane. Light enters the camera through small, fixed apertures that cut out marginal rays, but one very small aperture that controls the f /number of the system is adjustable. In the 35mm camera (24x36mm picture size) the adjustable apertures range in diameter from 0.8mm to 2.25mm. Therefore, the f /numbers extend from roughly $f/28$ to $f/79$ since the focal length of the mirror system for the 35mm camera is

63mm. This explains why the camera is called in the patent a "stenoscopic camera". (Photohistorians will recall that in the early days, "pinhole" photography was known as "stenopaic" photography.)

For simplicity, the schematic drawing does not show the shutter and normal view finder. However, the special view finder for self-portraits, which is a convex mirror, is shown at "V". When the camera is held at arm's length, one can then see his own image for proper framing. Otherwise, the general principles of operation are apparent from the drawing.

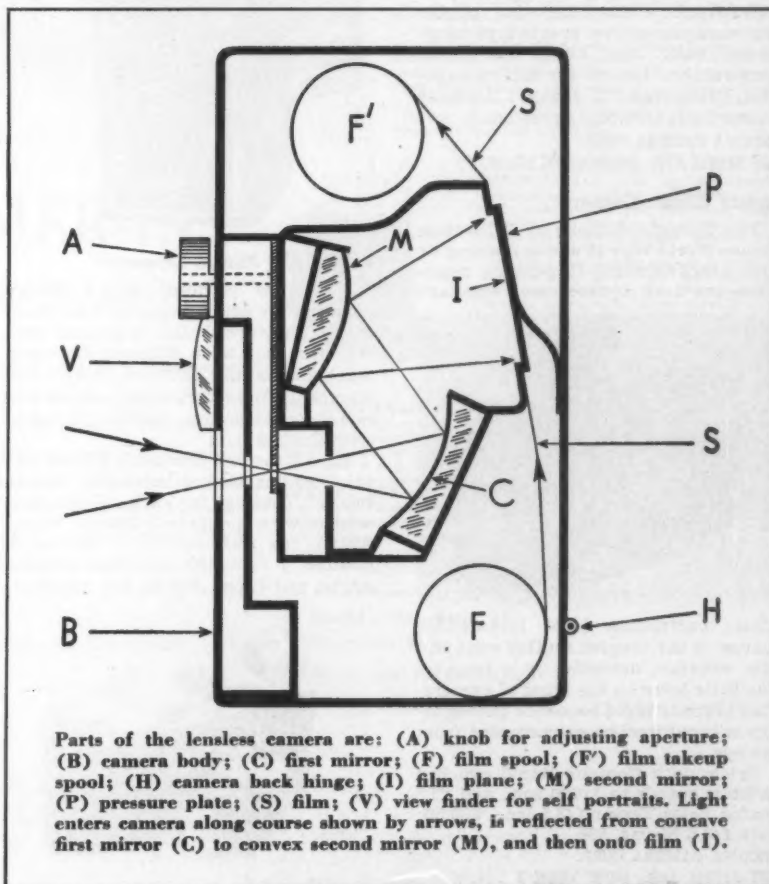
In addition to the self-portrait feature, the camera can be provided with short focal length lenses mounted in one or more of the adjustable apertures for taking pictures of extremely close objects. Certainly, the camera

represents a new design, but the slow speed limits its application. It can be made quite compact, and probably inexpensively, and eventually it may be possible to increase its speed at the sacrifice of depth of field.

Future of mirror optical systems

It is a safe policy to be skeptical of any unusual claims made for "new" optical systems if the claims are contrary to established principles. One claim put forth repeatedly for optical designs is that depth of field can be greatly widened without losing speed or sharpness. Such claims may not get in patents, but they do get in advertising copy. When the facts are completely known, the "depth" improvement can be shown to be due to overall poor sharpness or to a decrease in optical efficiency. The same sort of situation holds true for other similar claims. There is always a "bug" somewhere.

Because mirror-system optics is generally a new subject to practical photographers, undue claims for these systems are not difficult to make convincing. This is unfortunate, for unwarranted claims that cannot be demonstrated in practice simply lead to disappointment and distrust, and in the end the photographer may throw overboard something that has definite advantages if used within its limitations.—THE END



new products

Master Reflex Camera

The camera formerly made in Germany under the name Reflex Korable



is again being imported but with a new name and several improvements. It still takes 12 exposures $2\frac{1}{4} \times 2\frac{1}{4}$ in. on 120 rollfilm.

Featured: Focal plane shutter with speeds from 1 to 1/1000 sec.; synchronized for both flash and strobe; delayed action self timer; lever type coupled film advance and shutter wind; double exposure preventive; sports type viewfinder built into hood; all metal construction. Lenses are interchangeable. Price, with "T" coated f/2.8 Zeiss Tessar lens, \$199.50, tax included. ERCONA CAMERA CORP.

527 FIFTH AVE., NEW YORK 17, N. Y.

Tenax 35mm Camera

The Tenax was made by Zeiss-Ikon before World War II and is making its first reappearance. It delivers negatives one inch square, uses standard



35mm cartridges. Most remarkable feature is the coupled shutter wind and film advance, actuated by a trigger-like little lever on the front of camera. This permits rapid sequence photography without lowering the camera from the eye.

Price, with Compur Rapid synchro shutter, speeds to 1/500 sec., and "T" coated Zeiss Tessar f/3.5 lens, \$89.50; with f/3.5 Novar, \$66. ERCONA CAMERA CORP.

527 FIFTH AVE., NEW YORK 17, N. Y.

Penta Reflex Camera

The Penta is a twin lens focusing reflex camera which uses 120 film, producing the usual 12 negatives $2\frac{1}{4} \times 2\frac{1}{4}$ in. When focusing, the camera front remains stationary, but the twin lenses are pushed in and out together by a helical screw arrangement. The body is of metal. It has an f/3.5 anastigmat lens in a shutter with speeds to 1/100 sec.; also, a body release plunger and double exposure prevention. Price, \$49.50, tax included; ever-ready carrying case, \$4.75. The camera is made in Germany and imported by:

STERLING-HOWARD

561 EAST TREMONT AVE., NEW YORK 57



Iloca I & II 35mm Cameras

Two new medium priced 35mm cameras are being imported from Germany. They are similar in general construction but have different focusing mechanisms and shutters. Both take standard 35mm cartridges, are of all-metal construction, leather covered, with chrome trim.

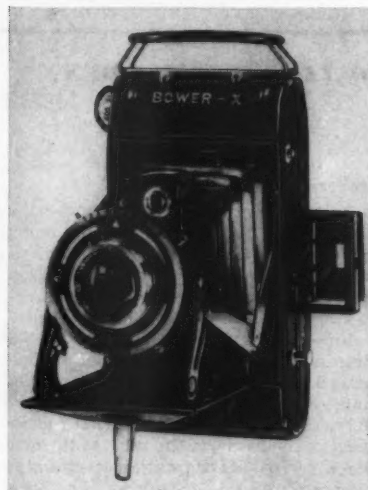
Iloca I focuses manually, has an Iltar f/3.5 anastigmat lens with "violet-brown" coating, in Vario II synchro shutter with speeds to 1/200 sec. Price, \$39.95, tax included; with Prontor-S shutter, 1 to 1/300 sec., and delayed action self timer, \$49.95, tax included.



Iloca II is similar but has a coupled rangefinder, Prontor-S shutter and self timer. Price, \$75, tax included.

ERCONA CAMERA CORP.

527 FIFTH AVE., NEW YORK 17, N. Y.



Bower-X Folding Camera

Made in Germany, the Bower-X uses 620 roll film, makes 8 negatives $2\frac{1}{4} \times 3\frac{1}{4}$ in. or 16 half-size, $1\frac{1}{2} \times 2\frac{1}{4}$ in.

Featured: Schneider Radionar f/4.5 lens in Vario synchro shutter, 1/25 to 1/200 sec., or Prontor-S synchro, 1 to 1/250 sec. and self timer; shutter can be actuated by body release, fingertip release or with cable release; front lens focusing; waist level brilliant viewfinder and open sports finder; weighs 24 oz.; dimensions closed, $6\frac{1}{2} \times 3\frac{1}{2} \times 1\frac{1}{2}$ in.

Price, with Vario shutter, \$34.50 including tax; with Prontor-S, \$43.

SAUL BOWER, INC.

114 LIBERTY ST., NEW YORK 6, N. Y.

B & H Model 70DL Movie Camera

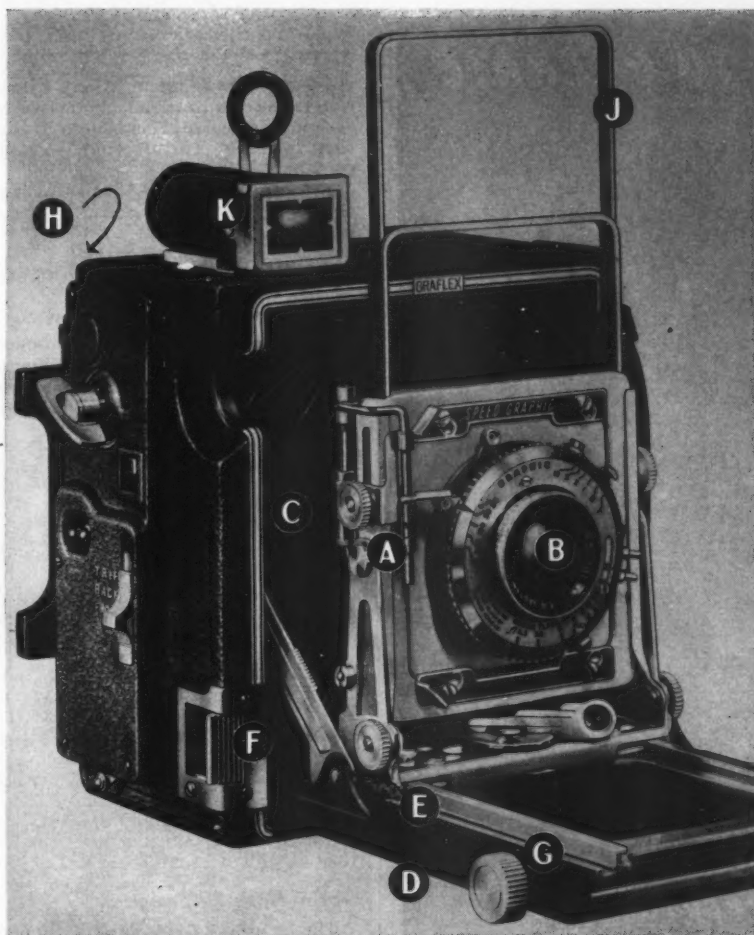
Replacing the 70-DA and 70-DE 16mm movie cameras, this one's outstanding feature is an entirely new optical viewfinder including a parallax



correcting device. The latter corrects for parallax from 3 ft. to infinity, in 8 steps.

The optical system is said to transmit 500% more light to the eye than on previous models, showing a brilliant image of the field. Eyepiece is adjustable through a range of 6 diopters for individual eye requirements. The finder has its own 3-objective rotating turret

(Continued on page 30)



A. CONTORTIONIST FRONT—For corrected perspective whenever you want it, you'll like the movable front of your Graphic camera. Simple, positive controls let you raise or lower the lens, shift it from side to side, or tilt it to correct focus and to increase depth of field. Great for architectural, scenic, table-top work, and many other subjects.

B. INTERCHANGEABLE LENSES—An important feature of all Graphic cameras is the speed and ease with which lenses can be switched. A quick flip of the slide locks, and your lens board is removed and ready to be replaced with one of the fine portrait, wide-angle, telephoto, or other special purpose lenses. For the best picture every time you'll want the right lens, and Graphic makes it easy to switch them!

C. DOUBLE EXTENSION BELLOWS—For extreme close-up work, your Graphic camera has a bellows which extends to more than double the focal length of the standard lens! With bellows extended the standard lens can give a full-sized copy! Of course, special lenses may also need the added usefulness of the double extension bellows. A fine feature.

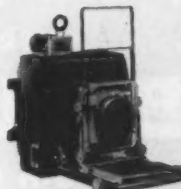
D. DROP BED—As an aid in correcting perspective in conjunction with the tilting lens board, and for use with wide-angle lenses, your Graphic has a camera bed which drops down and locks firmly while retaining the link between the track and focusing knobs. It's a small detail, but there are times when it makes the difference between a fine picture and a failure. You'll get that fine picture with your Graphic!

E. FOLDING INFINITY STOPS—You'll find two set stops on the bed tracks, that bring the camera front into exact calibration with the Vernier focusing scale, and squared with the film plane, where it is secured with the locking lever. These stops fold back to allow the camera front to move farther forward when needed. You can have as many as three sets of stops installed to give quick calibration with different lenses. A useful, original feature!

F. BODY SHUTTER RELEASE—For extra stability when the Graphic is hand-held, you'll find a shutter release set into the right hand corner of the camera body. It gives you solid support for the camera at the instant of exposure . . . another well-planned Graphic detail. The Speed Graphic provides, in addition, a selector control which gives instant choice of front or rear shutter from the same release.

MULTIPLE FOCUSING CHOICE—For viewing the picture field and for razor-sharp Graphic focus, these fine cameras offer a real choice. **G.** There's the accurate Vernier type focusing scale on the camera bed . . . **H.** the ground glass focus through the lens . . . **J.** the folding open frame viewfinder with parallax correction . . . **K.** the tubular optical viewfinder with parallax correction (optional on the Century Graphic). Use any one or use them together as extra checks . . . you can't miss with a Graphic.

FROM ANY ANGLE . . . IT'S THE GRAPHIC! You must see the Graphic cameras, and use them, to fully appreciate their many advantages. Although loaded with the many features, the great choice of focus, viewfinding, shutter release, film types, and other elements that make for versatility, the Graphic camera is built for easy operation. That's why America's news cameramen use and prefer them, find them ideal for quick, sure, simple operation that cuts adjustments and "fiddling" to a minimum. You can use it like an ordinary folding camera, with excellent results. But the added features are there when you need them!



THE SPEED GRAPHIC. Focal plane shutter with governed speeds to 1/1000th, built-in flash synchronization, the Graflex back that allows for the addition of accessories like the Roll Film Holder, the Graflex Holder, and the Graflexar. In three sizes: 2 1/4 x 3 1/4, 3 1/4 x 4 1/4, and 4 x 5. **THE CROWN GRAPHIC.** Identical to the Speed Graphic except for the focal plane shutter, but lower in price. **THE CENTURY GRAPHIC.** The compact lowest-priced Graphic camera, with many Graphic features, including ground glass focus, built-in flash synchronization, Graflex back, and coated 1/4.5 lens. In 2 1/4 x 3 1/4 size, only \$109.50 complete.

Prices subject to change

GRAPHIC CAMERAS... *Out Front for Versatility!*

You're looking at the front end . . . the "business" end, of a Graphic, and at some of the many features that make Graphic cameras . . . the Century, the Pacemaker Speed, the Pacemaker Crown . . . the world's most versatile! Shown here are some of the reasons why so many professionals, commercial photographers, and advanced amateurs depend on Graphics for prize-winning pictures. It's natural, too, that press photographers, who can't afford to miss those "once only" shots, have made the Graphic their favorite camera, for dependability and ease of operation! Look closer now, and you'll see a host of fine details . . . reasons why Graphic is the one to buy!

See your dealer today or mail the coupon for full details.

GRAFLEX
Prize-Winning Cameras

Graflex, Inc., Dept. 27
Rochester 8, N. Y.

Please send me details on:

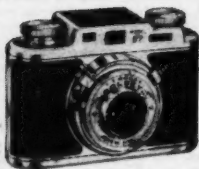
☐ Speed Graphic ☐ Crown Graphic
☐ Century Graphic

Name.....

Street.....

City..... Zone..... State.....

SO-O-O SIMPLE TO OPERATE



Versatile-BOLSEY B-2, precision 35mm camera with coupled rangefinder and built-in flash synchronization. \$73.50, including F.E.T.



Versatile-BOLSEY C... twin lens reflex camera with all the famous BOLSEY features. \$109.50, including F.E.T.

5 out of 10 Versatile-Bolsey Cameras are sold on satisfied customer recommendations... no other camera enjoys greater customer confidence. At Your Favorite Dealer... or Write for Literature. Dept. MP4.

....everything at
your fingertips!...

VERSATILE BOLSEY 35mm CAMERA

You, too, like tens of thousands of others, will be proud of your Versatile-BOLSEY. Whether you choose a Model B-2 or Model C Reflex you are assured of outstanding performance, mechanical excellence and the most for your money.

- Built-in Flash Synchronization... no unnecessary gadgets to complicate picture-taking. All controls at your fingertips.
- Semi-Wide Angle Lens... f3.2 coated, color-corrected lens, with short 44mm focal length. Covers wider area, increases depth of field, ideal for cramped quarters.
- Perfect for Portraits... without extra gadgets you can focus as close as 2 feet. Speeds from 1/10th to 1/200th of a second.
- Every Shot Is Sharp... split-image type built-in rangefinder, completely sealed. Brilliant optical eyelevel viewfinder makes framing quick, easy.
- Up To 4 Extra Pictures Per Roll... new film load plus compact design wastes no film in loading. Up to 4 extra pictures per roll, black-and-white or color.



BOLSEY CORPORATION OF AMERICA
118 East 25th Street, New York 10, New York

NEW PRODUCTS (Continued from page 28)

on which may be mounted any 3 positive objectives to match the lenses on the camera turret. The camera has all the operating features of previous models.

Price, with 1 in. f/1.9 Super Comat lens, \$369.95, tax included. For prices with other lenses write to:

BELL & HOWELL CO.
7100 MCCORMICK ROAD, CHICAGO 45, ILL.

Johnson Kam-Lok

The Kam-Lok is a small, two-piece metal device which permits cameras to be quickly mounted on or removed from tripods without having to manip-



ulate the tripod screw. The lower half fastens permanently to the tripod screw; the upper part screws into the camera tripod socket. The two halves are held together by a tongue and groove arrangement with a spring latch. The Kam-Lok is made in England by Johnson of Hendon. Write to: GENERAL PHOTOGRAPHIC SUPPLY CO. 136 CHARLES ST., BOSTON 14, MASS.

Novel Flash Extensions

The problem of how to fit an extension to certain types of flashguns which have no extension outlet is taken care of by three new units. Designed for use with the Argus C3,



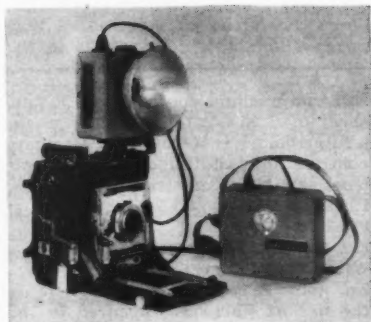
Kalart Compak, Stereo-Realist and Mercury flashguns, the extensions include a special auxiliary socket with extension outlet, which fits into the flashgun socket.

The extensions are also available without the auxiliary socket, for use with flashguns having extension outlets. Price, all models, \$4.95.

SPIRATONE
49 WEST 27 ST., NEW YORK 1, N. Y.

Strobonar Mounting Bracket

The light unit of the Heiland Strobonar I electronic flash can now be mounted on the top of a press type

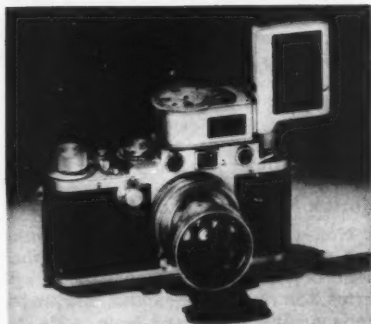


camera with a special mounting bracket. Normally, the light unit is kept in the upright position, but may be swung out of the way when the photographer wants to use the sports finder. For details and price of this installation, write to:

HEILAND RESEARCH CORP.
130 EAST FIFTH AVE., DENVER, COLO.

Leica-Meter Exposure Meter

Owners of Leicas can now have a photoelectric exposure meter specially made to fit in the accessory clip of the Leica. It's of the direct reading type, is keyed specifically to bright, dull, and weak lighting conditions. The meter has an accurately subdivided ASA scale with a simplified dial mak-

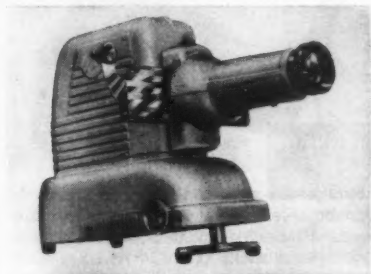


ing it unnecessary to transfer the scale values to a computer.

The detachable supersensitive element is said to permit an overall measurement range for exposures ranging from 60 sec. to 1/1000 sec.

Price, including supersensitive element and case, \$28.

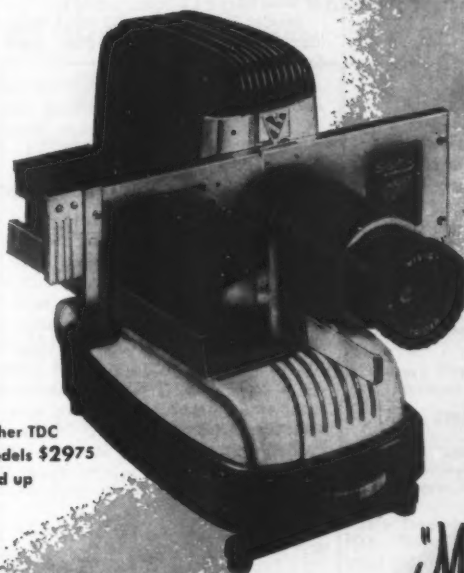
E. LEITZ, INC.
304 HUDSON ST., NEW YORK 13, N. Y.



Two Viewlex Slide Projectors

Exceptional light output and image brilliance are said to be provided with low power in these new projectors for
(Continued on next page)

everybody loves a slide show!



Other TDC
models \$2975
and up

especially with this newest,
greatest achievement in slide
projection values.

TDC

"Mainliner 300"

COOL, BRIGHT AND BEAUTIFUL

Have Fun
with Slides

Show Your

- HOBBIES
- VACATIONS
- TRAVELS
- FAMILY
- FRIENDS
- PETS
- SPECIAL EVENTS

with manual changer

\$54⁷⁵

\$64.75 with Selectron-Semimatic
changer (as illustrated)

- **300 WATT ILLUMINATION** — Never before such brilliance at this low price. It means the finest pictures — sharp, clear, amazingly lifelike!
- **POWERFUL BLOWER SYSTEM** — No cooler projector at any price! Smoother, safer performance because it stays cooler longer.
- **COATED ANASTIGMAT LENS** — Helical focusing, 5"..
- **MODERN TRAY LOADING** — Accepts SELECTRON-Automatic or SELECTRON-Semimatic changer and TDC Selectrays.



THIS NEW FREE
BOOK SHOWS YOU THE WAY
TO BETTER SLIDE PROJECTION.

TDC offers you

Up-to-the-minute information on slide photography . . . crammed from cover to cover with practical pointers, pictures . . . all about slide films, cameras, lighting, exposure, filters, composition. Get your copy today!

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THREE DIMENSION COMPANY
4555 W. Addison St., Chicago 41, Ill.

THREE DIMENSION COMPANY M.P.4
4555 W. Addison St., Chicago 41, Ill.
Rush me my FREE COPY of your book about slide
photography and projection.

NAME _____

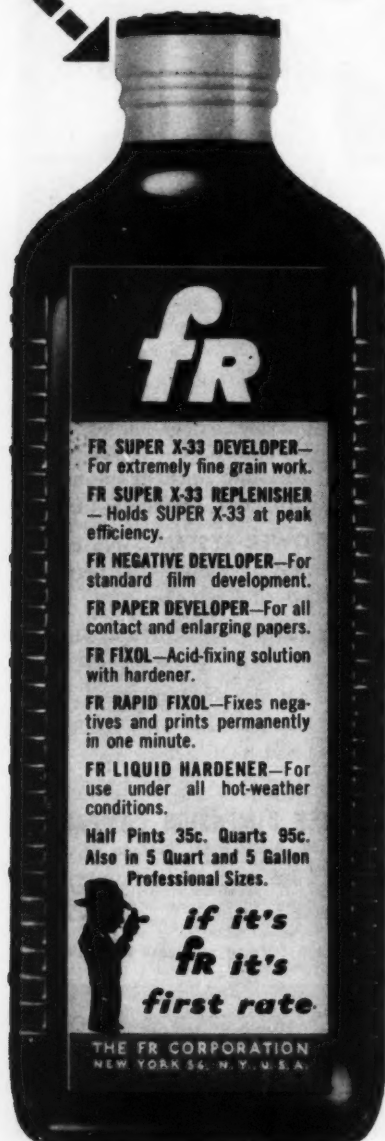
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CITY _____ ZONE _____ STATE _____

For picture perfection it's TDC projection

As Easy as removing this Cap

No messy mixing of chemicals. No fear of too strong or too weak a solution. Perfect darkroom results every time—when you use FR Prepared Liquid Chemicals. Scientifically prepared and laboratory pre-tested, FR Liquid Chemicals remove all bother, all guesswork from developing and printing. All you have to do to put them to use is remove the cap!



NEW PRODUCTS (Continued from page 31)

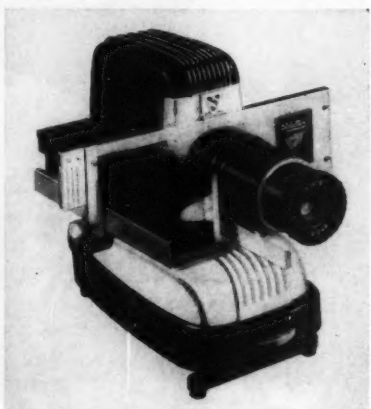
2 x 2 slides. Both feature die-cast aluminum bodies with gray hammer tone finish, quick and accurate focusing controls, slide carrier which "irons out" warped slides, flat field projection. They are Underwriters' Laboratories approved.

Model V-3R has a 150 watt bulb, 5 in. Retar, f/3.5 lens. Luxtar 5 in., f/3.5 lens is available for \$6. extra.

Model V-33L uses a 300 watt bulb, is cooled by a motor driven fan, has a 5 in. Luxtar, f/3.5 lens. Price, Model V-3R, \$35.95; Model V-33L, \$59.95.

TDC "Mainliner 300" Slide Projector

Newest of the TDC line, this projector for 2 x 2 slides is of diecast construction, finished in deep blue and silver. It has a broad base with easy, positive tilt adjustment. It will take the TDC Selectron automatic slide changers and Selectrays for tray loading of slides. Illumination is provided by a 300 watt, T-8½ double contact lamp in adjustable mounting, and 5 in. anastigmat lens. An AC blower and baffle system keeps it cool. Price,

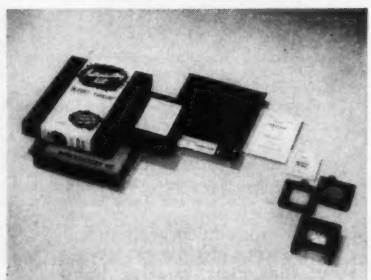


\$54.75 with manual slide changer; \$64.75 with Selectron-Semimatic changer, as illustrated.

THREE DIMENSION CO.
4555 W. ADDISON ST., CHICAGO 41, ILL.

Varigam Paper Introductory Kit

Varigam variable contrast enlarging paper is now available in a complete low-priced kit which includes the



following items, sufficient for most amateur needs:

A 25-sheet package of 8 x 10 Varigam DL paper; filters No. 3 and 7, for

soft and medium contrast; a 5 x 7 in. sheet of S-55X safelight filter stock; a filter holder that holds the Varigam contrast filter right under the enlarger lens; simplified instruction booklet. Price is \$2.98.

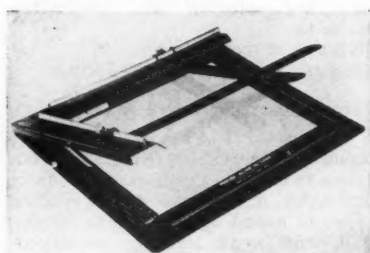
PHOTO PRODUCTS DEPT.

E. I. DU PONT DE NEMOURS & CO.
WILMINGTON 98, DEL.

Ed. note: A comprehensive article on the use of Varigam appeared in the March issue of MODERN.

Improved Precise Metal Easel

The Precise all metal enlarging easel has been redesigned and the manufac-

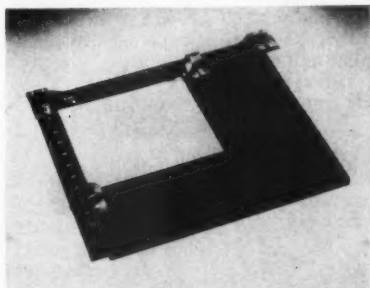


turer now lists the following features:

Frame lies flat with any thickness of paper; masking bands slide smoothly; hold correct right angle alignment; white focusing surface; heavy metal base; 1/16 in. graduation scales; adjustable guides to handle paper up to 11 x 14 in. Price, \$7.50, tax-included.
AMERICAN PHOTO LABORATORIES
28 N. LOOMIS ST., CHICAGO 7, ILL.

Kodak Masking Easel, 11 x 14

Non-warping Masonite, coated with felt to minimize slipping, forms the base of Kodak's new easel. Masking arms 2 in. wide carry index markings for margins 1/4, 1/2, and 3/4 in. wide. A novel spring mechanism holds the arms in position, permits easy adjustment, and holds them to rigid right angle shape. A support holds up the



arms while paper is being positioned, can be released by merely raising the arms. Price, \$19.75, tax included.
EASTMAN KODAK CO.
ROCHESTER 4, N. Y.

Forene Protective Hand Cream

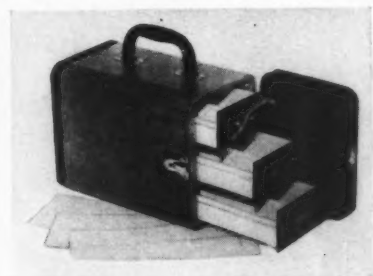
Darkroom workers whose hands are sensitive to photo chemicals can now protect them by rubbing Forene into the skin before exposure to the chemi-

cal. After using the chemicals, application of more Forene quickly cleans off irritating and staining substances. The manufacturer states that Forene contains only non-toxic ingredients and is harmless to the most sensitive skins. The 79 cent jar is estimated to contain a year's supply for the average amateur.

SUTZ PRODUCTS CO.
8020 SOUTH HALSTED ST.
CHICAGO 20, ILL.

Red-E-File Slide File Cases

A new line of attractive, leatherette covered plywood cases for storing 2 x 2 slides is now being made. Brass plated hardware and shock-resistant polystyrene moulded inserts are featured.



Model N-300 (shown) has three drawers, holds a total of 300 glass slides or 900 readymounts. Price, \$10.75.

Model N-200 is a hinged cover case, with one insert holding 200 slides or 600 readymounts. Its covered with blue leatherette, has a carrying handle. Price, \$6.50.

Model N-100, holds 100 slide or 300 readymounts. Price, \$3.25.

For illustrated circular, write to:
RACAB, INC.
65 SOUTH 11 ST., BROOKLYN 11, N. Y.

Brumberger Steel Slide File

Model 1032 is an all steel file for 35mm negatives or film strips. It's made of heavy gauge steel, spot welded, and finished in platinum gray wrinkle enamel. Each No. 1032 drawer will hold up to 32 film strip cans in individual numbered compartments. Price, per drawer, \$2.95.

No. 1092 housing takes six of the file drawers. Price, \$9.95.

No. 1095 cabinet consists of six file drawers and housing. Price, \$24.95.

BRUMBERGER CO.
34 THIRTY-FOURTH ST.
BROOKLYN 32, N. Y.

Pictures Hung Without Nails

A square of adhesive backed tape which will stick to practically any kind of surface supports the hook of the Jiffy picture hanger. It is easily applied and removed by moistening the tape and the manufacturer states that it will hold up to 10 lbs. safely. Jiffy hangers come in packages of six. Price, 25 cents per package.

JIFFY ENTERPRISES INC.
VICTORY BLDG., PHILADELPHIA 7, PA.

From refrigerated storage warehouses
outdated — guaranteed good!

U. S. GOV'T SURPLUS

JUST ARRIVED — VERY FIRST OFFERING
NO SHORTAGE HERE! BUY NOW AND S-A-V-E

16mm MOVIE FILM

16mmX100' Plus X negative, each \$ 1.40	3 for 3.75
16mmX100' EK Airgraph, single perf. each	1.00
20 rolls	12.00
16mmX50' Magazine Sup XX neg. ea	1.25
5 for	5.50
16mmX50' Magazine Plus X neg. ea	1.25
5 for	5.50

The following include cost of regular Kodak Laboratory processing:

16mmX100' Super X, each	3.95
6 for	22.50
16mmX100' Super XX, each	3.95
6 for	22.50
16mmX100' Type A Kodachrome, ea	6.90
16mmX50' Magazine Super X, each	3.35
3 for	9.50
16mmX50' Magazine Super XX, ea	3.35
3 for	9.50
16mmX50' Mag Kodachrome, Daylight, each	4.95
16mmX50' Simplex Mag Super X, ea	1.95

Please allow postage. Excess refunded.

CUT FILM

2 1/4X3 1/4 Anso Sup Pan Press, film pack,	ea 1.30
3 1/4X4 1/4 Def Arrow Pan Press 2 doz	1.35
3 1/4X4 1/4 Contrast Process Ortho	6 doz 2.50
4X5 Anso SSS Ortho, slight fog,	6 doz 2.75
4X5 Anso Sup Pan Press ..	2 doz 1.65
4X5 Def Arrow Pan Press ..	2 doz 1.65
4X5 EK Verichrome, film pack, ea	1.50
3 for	4.20
4X5 Anso Direct copy ..	6 doz 1.75
4X6 (10x15cm) Agfa Isopan	6 doz 2.95
5X7 Anso SSS Ortho	2 doz 2.25
5X7 Anso Super Pan Press ..	2 doz 2.25
5X7 EK Commercial Ortho ..	2 doz 1.25
5X7 EK Super XX, film pack, ..	ea 1.50
4 for	5.00
7X8 1/2 Transmission Type A ..	6 doz 3.00
7X9 Transmission Type C ..	6 doz 3.00
8X10 EK Contrast Process Pan	2 doz 2.50
8X10 Anso Direct Copy ..	6 doz 4.75
20X24 EK Commercial	2 doz 6.95
10 doz	30.00
20X24 Anso Reprolith Pan, 1/2 gr	14.00

Please allow postage. Excess refunded.

All aerial cameras and equipment in stock.

PAPER

CONTACT PAPER

8X10 Chloride #1, SW SM, '48, gross	2.50
10X10 Chloride #2, LW SM, gross	2.00
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strobe *for the amateur*

photographs by DENNIS STOCK

text by MILTON J. SCHWARTZ

IF all the rumors, gossip and hearsay about amateur electronic flash units were placed end to end, the line of print would stretch from about three and one half feet to infinity.

Why all the confusion? Well, electronic flash—or strobe as it is now almost universally called—is relatively new. It's only in the last few years that units have appeared on the market within the price range of the majority of amateurs. And anything new is always accompanied by a vast amount of misunderstanding.

If you're the average amateur or semi-professional photographer, you may now be taking indoor or night shots with flashlamps and telling yourself that strobe is too expensive.

True, the initial cost of a strobe unit may run anywhere from \$40 up, but each unit is good for about 20,000 flashes before the bulb or battery need be replaced. How much would 20,000 flashlamps at sixteen cents apiece cost you?—\$3,200!

O.K., you may say, so strobe is much cheaper in the long run, but can I use it on my camera? How about repairs—don't they break easily? I hear that strobe light doesn't carry and doesn't penetrate. What's the difference between shots taken with flashlamps and strobe? What should I look for if I buy a unit?

Let's take up the questions one at a time. Strobe units can be used with any camera—even a box camera. Although open flash can be used, you'll want to have it synchronized for convenience. The majority of cameras being made today are already equipped with built-in synchronizers. Many synchronizers are made

Left: Dancer Pearl Primus was stiff, unreal when she posed for strobe shot. When she actually danced, she became supple, alive. Notice detail in highlights, a strobe characteristic. **Right:** Dormitzer Synetron Candid unit synchronized to Contax produced sufficient light for f/3.5 exposure on Kodachrome, daylight type. Modeling light was placed high to left, fill-in was at camera with handkerchief over reflector to cut down light output.





Left: Dancing cat was caught by Contax and Dormitzer unit at f/3.5 on Kodachrome, daylight type. Lights faced each other, high and to either side of cat. Notice detail in fur, lack of burned-out highlights. Below: Pearl Primus was again shot in a dance routine with Contax, this time in color. Note detailed shadow areas as well as rich highlights in this Kodachrome.



just for gas-filled bulbs or for strobe. Some are now being built into the German Compur shutters such as on the Rolleiflex. Many American shutters have variable millisecond delay mechanisms on them. Millisecond delay merely denotes the amount of time between the set-off of the flashlamp or strobe and the opening of the shutter. The strobe unit usually requires a zero millisecond delay although many units can be bought with other delays.

If your camera has no flash attachment, you can have one built in by a repairman for \$12 upwards. Focal plane shutter cameras, such as the Leica, Contax, Perflex, Kine Exakta, Rectaflex, Graflex and so on, can only be synchronized for strobe at those shutter speeds during which the curtains are open to the full width of the negative—usually less than $1/25$ sec. Since the duration flash of $1/500$ to $1/5000$ will actually govern the exposure and the amount of action stopped and not the shutter, this won't bother the photographer too much. He will have trouble, however, in brightly lighted places where there is enough light to produce an exposure by daylight as well as strobe. A secondary image may result in this case.

About repairs: Modern strobe units are pretty hearty. You may have heard from friends who bought some of the early strobe units that they spend more of the time in the repair shop than at work.

A lot of improvements have gone into strobe manufacture in recent years. We think you'll find that the new units stand up well—unless you drop the unit from a third-story window.

Light obeys laws

If you light a match, or an electric lamp, the intensity of the light decreases rapidly as it travels away from the light source. To be technical, it decreases inversely as the square of the distance it travels. Theoretically, it would travel an infinite distance, getting weaker, but never being dissipated completely.

Actually it "falls off" quickly to the point where it becomes useless for photography. This is true of all light sources, including strobe. The guys who insist that strobe falls off suddenly at a certain distance are talking through their hats.

What should you look for when you go to buy a strobe unit? Suppose we take up that question in this manner. Let's first discuss the types of units available and the use to which you want to put strobe. Then let's talk about picking one out, using it, the differences you can expect, and a few operating tips.

There are two main types of units on the market. One is portable and gets its power from batteries—usually of the wet cell variety. The other unit must be plugged into an A.C. outlet. Some A.C. units have battery pack adapters making them portable. Battery units must be recharged with a battery recharger after a certain number of shots. To recharge, you plug the battery recharger into an electrical outlet and connect to the strobe battery.

Some units have provision (Continued on page 84)

Right: Boy watching a children's theater production remained relatively undisturbed by strobe because of the extremely short duration of the flash. Although most strobe units take about 12 seconds to recharge between flashes, a continuity series was made by shooting several laugh sequences separately, then placing them together later.



is pictorialism killing photography?

"Good pictures aren't made by rulebook," says LLOYD E. VARDEN.



P. H. Oelman's print, "Hebe" (above), was made solely for salon exhibition, and has been highly successful in this field. Painstakingly composed according to rules accepted by pictorialists (note the placement of the torso, the sweep of the arms and wrist, the separation of the fingers), the final print was made on semi-matte paper, dye retouched, and sepia toned. By comparison, Fritz Henle's picture (opposite page) was composed by instinct

rather than rules. Interested in producing a picture for possible magazine illustration, Henle clicked the shutter whenever the girl moved into a natural pose that pleased him. The final print was made on unferrotyped glossy paper without retouching. The only valid way for any observer to evaluate these two different approaches is to ask himself: "Which type of picture do I enjoy looking at the most? Which type would I like to equal?"

IT gives me the jitters to hear a photographer talk about man-made "rules" of composition in such a way as to imply an objectiveness similar to that of physical laws. Particularly in the minds of most pictorial photographers these rules of composition seem to have assumed an awesome constancy. Deviations are permitted, but only if they do not destroy the evidence that the rules *have* been complied with. It would be asking too much, says the pictorialist, to demand that an S-type composition, for example, must always contain a perfectly exact serpentine curve of a given shape. The "S" can be long and drawn out, or squatty; that is irrelevant. But it *must* be there, even if an imaginary line has to be drawn, connecting various objects in the picture in such a way that an "S" can be constructed.

Such liberties with the rules allow the pictorialist to express attitudes of tolerance and provide all the leeway thought to be necessary for freedom of expression. Actually, the whole thing amounts to a defensive shield designed to ward off the arguments of the realists, for behind it still lie the basic tenets of the pictorialist—the rules of composition.

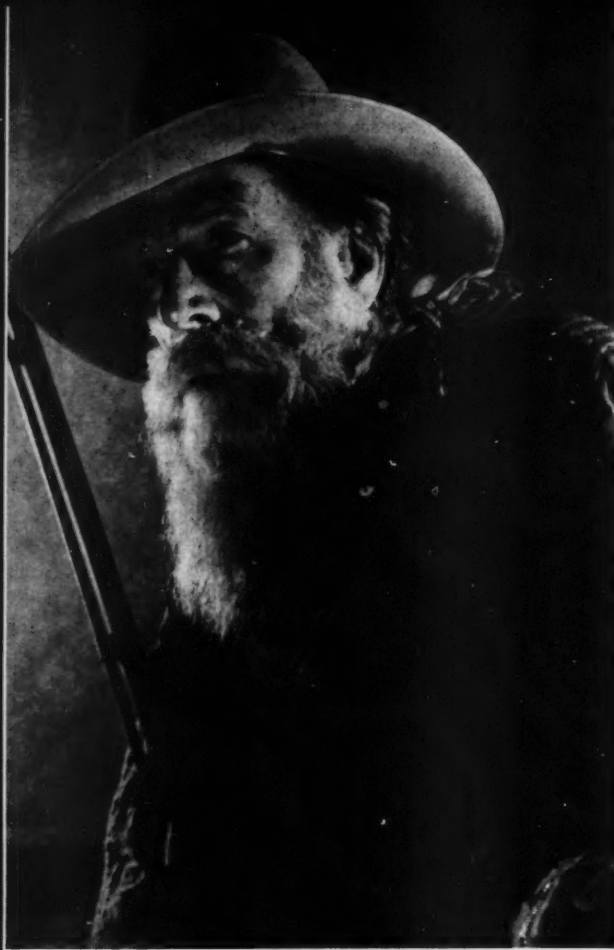
Are you able to explain why you like a colorful sun-

set; a snowcapped mountain rearing upward toward odd-shaped, misty clouds; an ocean scene with waves dashing against a rocky coast, or an open landscape with scattered trees and rolling hills? Can you tell why you are sometimes impressed by a fleeting glimpse of some unknown person; a view of a sprawling city from a tall building; or the billowing smoke from a powerful locomotive? Do you know why you are depressed when you see dirty, shabbily dressed children in a slum area; a horse being whipped while straining to pull a heavy load; or an old bridge being dynamited to make way for a new one?

Each to his own taste . . .

You would answer these questions with such expressions as "it is beautiful; she attracts me; it shows strength or progress; it makes me feel sad; it reminds me of such and such." These are all answers based on emotional reactions. To you they require no elaboration. You assume that others understand your meaning of "beautiful," "sad," "attractive," etc. You see no need for analyzing your personal feelings, and if someone dis-





agrees, you shrug your shoulders, say, "Everyone to his own taste," and let it go at that.

Can pictures be analyzed?

The pictorialists and their picture "judges" reason differently. They think it possible to mechanically "analyze" a photograph to determine whether it is good or bad. This is difficult to comprehend, particularly when their analysis is based upon the observation or neglect of certain rules of composition or technique. If a scene in nature can be appreciated without deliberation, why then should a photograph of that scene require an awareness of structure to be classed as an artistic product? Oftentimes in salon judgments, the entire "analysis" of a picture centers about composition. To my way of thinking, such analytical concepts are accepted as gospel only by those who have yet to understand the real meaning of artistic achievement.

I do not mean to imply that the mere rejection of the principles or rules of composition is an indication that one has reached an understanding of true art values. Hundreds of workers over the years have expounded their reasons for embodying recognizable principles of composition in pictorial art, but hundreds of others have denounced these same principles, expressing altogether different opinions on what constitutes true art. Who, then, is to say which represents the *right* approach to art evaluation? It is my belief that *no one* at present can answer this question. The answers that disregard composition, including both the perfunctory and erudite ones, seem to me to be just as open to logical criticism as those which go all out for cliché rules of composition.

Concerning rules of composition

Professor DeWitt H. Parker in his book, "The Analysis of Art," states: "*For those who delight in thinking, the most fascinating problems are the most elusive. There is an initial discouragement in approaching them, and a continuing humility, yet stronger than either is the attraction of their mystery.*" Now everyone likes to look upon himself as a thinking person. That's why most beginning photographers attend lectures, read book and articles, and seek private instruction to learn the principles of composition. I was quite delighted in earlier days to learn that composition apparently was a mechanical subject that required only a certain amount of studious effort to master. As time went on, however, I found that such questions as "Why should the center of interest be placed in such and such particular areas?" were never answered on a factual basis. And as I inquired into books on art evaluation I found a maze of confusing, empirical state-

These portraits of a bearded "Western" and Wendell Willkie represent two radically different goals in photography. William Dennin's portrait of a bearded man makes no pretense of depicting naturalness or reality. In salon circles, most photographers feel justified in altering characterization by means of props the same as a movie director uses costumes, props, and stage settings to create characterization for his actors. In photographing Wendell Willkie for a book jacket, Philippe Halsman's goal was to produce an unassuming (though somewhat flattering) likeness of Willkie as he actually appeared.

ments, contradictory from author to author. Composition quickly became an "elusive" problem. There seemed to be no way to prove or disprove what was being said and written on the subject.

About the only textbook "reason" expressed to justify the rules set forth was the assertion that the eye-movements of an observer were controlled by line, masses, placement of the center of interest, etc. Of course, there were the usual picked examples from classical art to strengthen any particular point, but never any documentary proof that the artist who produced the work had knowledge of the rule he was supposed to have employed. In short, these reasons were based upon pure theory.

Actual tests vs. theory

Actual eye-movement studies have proven beyond doubt that the eyes do not perform in the manner described by those who championed the theoretical rules of composition. In the eye-movement studies the actual movements of an observer's eyes are recorded by a motion picture camera. The results are plotted in two ways: (1) The path of observation of each observer can be sequentially drawn by connecting one visual fixation point after another; (2) for a group of observers, a point can be made for each eye fixation without connecting lines. This gives an accumulation of the observation points in the areas most frequently viewed by the entire group.

Such studies prove that (contrary to what has always been preached in the past) the eyes do not follow anything like a particular and predictable path through a

picture. They can be summarized as follows, in brief:

1. The eyes do tend to enter a picture from the left, but not because of anything in the picture itself. The same habit is observed when blank sheets of paper are used.

2. The eyes do not travel in a cyclic pattern from the so-called primary center of interest to the secondary center of interest.

3. The eye-movements are haphazard in every instance. Only rarely has any correlation been found between actual eye-movements and the dictates of the rules of composition.

4. Finally, the time spent by the eyes in looking at a particular area is no index of the mental impression left upon the observer.

Editor's Note: Ten years ago MODERN PHOTOGRAPHY (then called MINICAM) sponsored a series of eye-movement studies of salon prints. Thirty observers viewed, in turn, eleven prints from an exhibition hanging at the Chicago convention of the Photographic Society of America. The eye-movements of each observer were automatically recorded by a 16mm Scanacord camera provided by H. A. Thompson of the Arthur Kudner Advertising Agency, and the results of this test appeared in a 12-page article in the February, 1942, issue of MINICAM. Copies of this issue are now available only through dealers in back-issue magazines.

They didn't like the proof

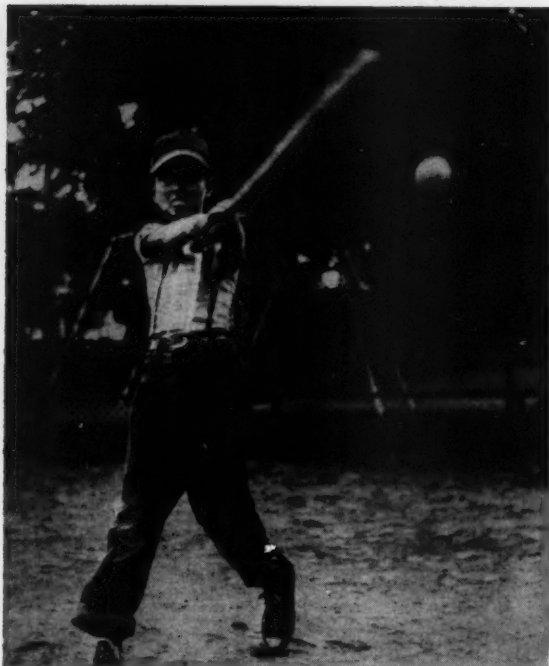
The most amazing thing about the outcome of this approach to the study of (Continued on page 92)

William Dennin's Leica shot of a boy sitting on a winding stairway, left, contains a studied, precise placement of images that usually (not always) identifies a picture composed to the smallest detail by rulebook. Ernst Haas' picture from Magnum, on the other hand, cheerfully thumbs its nose at practically every rule in the book. Chief sacrilege in the eyes of one salon judge are the conflicting centers of interest in Haas' print. Quoth the judge: "... actually it is a single negative containing two separate snapshots, neither of which is capable of holding a viewer's interest by itself."



pictures from our readers...

"I tried it myself"



EACH month these pages contain as many pictures sent in by readers of MODERN as we have space to print. If you have a favorite picture you would like to share with others, we would enjoy the privilege of seeing it. While color shots cannot be reproduced here, there are no rigid rules concerning black-and-white prints. Any type of subject matter is eligible for consideration as long as it is accompanied by complete technical data on how you went about making it.

Please send only prints—not negatives. For reproduction purposes, these prints should be no smaller than 4 x 5 inches—and larger prints are highly preferable. Preference is also given (for reproduction reasons) to untuned prints with a glossy finish. Accepted pictures will be paid for at our regular rates; unaccepted pictures can be returned only if accompanied by a stamped, self-addressed return envelope. All contributions should be sent to: Columns Editor, MODERN PHOTOGRAPHY, 251 Fourth Ave., New York 10, N. Y.

J. H. Britt of Camp Atterbury, Indiana, made this picture a split-second after the batter connected with the ball. Britt used a Voigtlander Bessa II camera, Plus X film, and a shutter speed of 1/400 second at f/3.5. "I like the expression and the blurred images due to shallow focus," says he, "but I wish I had managed to include the catcher."



From British Columbia comes a picture of a Canadian pup who goes in for photography—all the way in! Reader Barras Walker held a #5 flashbulb off his 4 x 5 Press King camera (6½" Paragon lens) to snap this picture at 1/200 second, f/32, on Superpan Press. "A bit of hamburger wedged inside the bellows," he confesses, "may have contributed something to the pooch's cooperation."



Dixie Dixon, a student at the California Institute of Graphic Arts, made this abstract which she calls "Woman Of The Sea" at the end of her 18th week of photographic training. Two 4 x 5 negatives, one of a nude and the other of a beach scene, were sandwiched in an Omega enlarger and printed on Velour Black R-2 paper. The grainy effect was produced by a Defender Texture Screen Type F over the paper.



Peter Basch's article "The Different Nude" (Jan. 1951 issue) inspired George Padginton to try his skill with figure photography for the first time. "This picture," he writes, "is my best so far. It was made with a Rollei, 1/10 sec. at f/3.5 on Super XX film. Daylight streaming through a large window was the only source of direct illumination."



The evening they read "Studio Lighting For \$12.05" (Jan. issue), Martha Peebles and her husband decided to try out the lighting suggestions without waiting to buy built-in reflector bulbs. Two #1 Photofloods, one at floor level concentrating light on the hair through a paper cone, the other supported at camera level, furnished the illumination. The Rollei exposure was 1 sec. at f/22 on Plus X film.



Tana Hoban's article on child photography (Feb. issue) hit the mark with Brock Lane of West Falmouth, Mass., who immediately tried his hand with unposed portraits by natural light. Made in the shade on a sunny day when there was lots of reflected light, this Rolleiflex picture called for 1/100 sec. at f/5.6 on Plus X film. The actual print shows excellent tone gradations from jet black to purest white.

Cold Light Enlargers

What are they?

How do they work?

*Do they make better prints
than conventional types?*

by CHARLES H. COLES

CAN you answer the three questions asked at the side of this page? If so, you're an exception. Just ask some photographer friends or some of the salespeople in camera stores. You might well be amazed at the variety of uninformed and biased answers.

If you already own a conventional enlarger or are thinking about buying any kind, you should recognize that there is a definite trend to cold light enlargers. Three of the biggest manufacturers of enlargers, Eastman Kodak Co., DeJur-Amsco Corp., and Federal Manufacturing & Engineering Corp., have changed virtually their complete lines over to cold light. There is a brisk sale of units to convert existing conventional enlargers to cold light operation. It's not the "enlarger of the future;" it's here.

Why use cold light?

Cold light enlargers have so many advantages it's reasonable to assume that they will become the most favored type in the future. To the darkroom worker they offer finer print quality with a minimum of spotting and retouching. Compared with prints made on conventional condenser enlargers, cold light enlargements show less grain, give better rendering of texture; dust spots are subdued, fewer scratches show up, negative retouching is less conspicuous. They take up less room, are simpler in construction; they cost no more than conventional enlargers of comparable quality. Yet, there is a great lack



Condenser enlarger emphasizes graininess, other defects of 20X enlarged negative. Print was worse than reproduction.

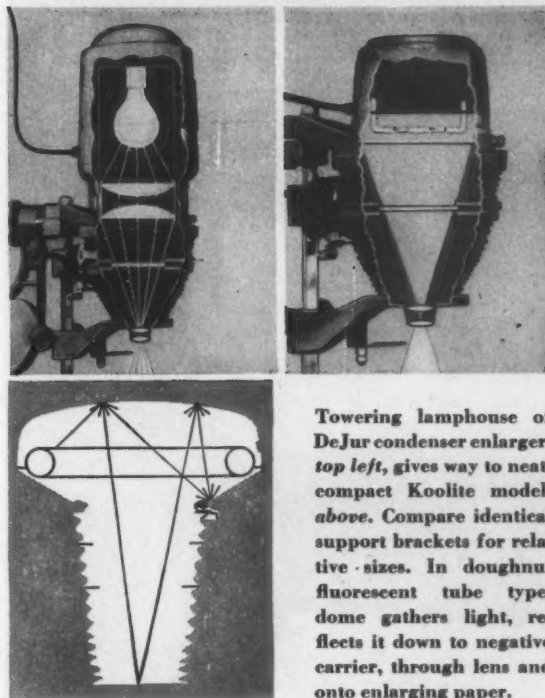
of information about cold light enlargers, so far as amateurs are concerned, and considerable misinformation is current. So, this article will tell you all about cold light, what it is, how it works, how best to use it, what its limitations are.

What is cold light for enlargers? It is a fluorescent type of illumination which provides light of about the same exposure value as the usual incandescent enlarger lamps but with much less heat. Light sources of this type have a high output in the blue-violet part of the spectrum to which enlarging papers are very sensitive.

How they work: Grid type

Cold light sources for enlargers are of two distinct types: the cold-cathode thin tube grid and the thick tube fluorescent lamp. (See illustration, right.) The cold-cathode grid type of lamp consists of a narrow glass tubing, less than $\frac{1}{4}$ inch in diameter, which is bent back and forth to make a grid that covers the area of the negative. This tube is coated on its inner surface with phosphors which glow brilliantly under excitation. Underneath the grid is a piece of flashed opal glass which breaks up the light pattern from the grid for more even illumination.

The tube itself is filled with a mixture of gases—the major one is argon. A small amount of mercury is introduced, which is responsible for producing most of the light and carries the major portion of the tube current.



Towering lamphouse of DeJur condenser enlarger, top left, gives way to neat, compact Koollite model, above. Compare identical support brackets for relative sizes. In doughnut fluorescent tube type, dome gathers light, reflects it down to negative carrier, through lens and onto enlarging paper.



Cold light enlarger print from same negative shows slightly less contrast; graininess, dirt, defects are suppressed.



Straight prints from same negative were made on condenser enlarger, *top*, cold light, *bottom*. Tones of building are same in both prints. *Above*, there's more contrast, but shadows are black, empty. Cold light print, *below*, is slightly softer, has open shadows, better detail in highlight areas. This is characteristic result with cold light enlarger.



The argon acts as an "assistant" in getting the mercury vapor started, carries some current, and gives some light. The grids are energized from a transformer which delivers either 1000 or 2000 volts depending upon the length of the grid. The current is small, 30/1000 amperes, about one-third as much current as a 10 watt lamp takes. The primary of the transformer draws from 20 to 30 watts, depending upon whether the enlarger covers a $2\frac{1}{2} \times 3\frac{1}{2}$ film or a 4×5 negative. The power supply must be alternating current.

The cold-cathode grids may be manufactured in a variety of colors, but only three are in common use: a white with about the same color as photoflood light; a blue-white halfway between photoflood and sunlight; and a blue with the color of the sky. Colors of light are most accurately described by their color temperature in degrees on the Kelvin scale, so these grids will be referred to by the apparent color temperatures of their light outputs.

The most rapid printing light is the blue one (6400°K), but the image is difficult to see on the easel. Next in speed is the blue-white (4500°K) with greater visibility on the easel. Slowest of the three is the white (3500°K) which approximates the incandescent lamp in color. The blue light is only about twice as fast as the white lamp, so its extra speed is not enough to overcome its drawback of low visibility.

Fluorescent circular lamp type

The second type of cold light enlarger is built around a circular fluorescent lamp about $1\frac{1}{4}$ inches in thickness and $8\frac{1}{2}$ inches in diameter which illuminates the inside of a white dome in the enlarger head. This white dome gathers the light, reflects it down, and illuminates the negative for projection. Even though this type of enlarger depends upon reflection from the white area, the intensity of illumination on the easel is approximately equal to the cold-cathode type.

The circular lamp is coated on its inner surface with fluorescent phosphors which glow when ultra-violet light strikes them. The tube contains gases and mercury vapor which give off the needed ultra-violet light when they are energized by electricity. These lamps ignite instantly when the switch is closed. They have a special electrical circuit arranged to obviate the normal delay period in lighting up usually associated with fluorescent lamps.

The circular lamp gives a white light, about the color of a photoflood lamp. Like the cold-cathode grids, they have a short warm-up period during which their brilliance increases to not quite double their starting intensity. Both types of light sources have one thing in common—they provide highly diffused illumination. Both types also require very little current to get them started and supply considerable light, mostly of short wavelengths, to which enlarging papers are sensitive. This is exactly opposite to the performance of incandescent lamps, which need a lot of current to heat the filament to incandescence, but produce only a small amount of light useful for exposing paper, while the remainder of the energy is wasted as heat.

How do they differ?

Before we can see how and why a cold light enlarger gives better (or worse) results than a conventional type, we ought to examine briefly the conventional enlargers.

The simplest enlargers, and the least expensive, are the diffusion type. These are generally lighted by a clear incandescent lamp, backed by a simple reflector to throw the rays down. A piece of opal glass or ground glass is used to diffuse the light before it hits the negative. This results in considerable light loss. To overcome this, larger lamps are sometimes used but they generate more heat which may cause the negative to buckle, or even damage it. Diffusion enlargers tend to produce prints of relatively soft contrast; they also minimize negative scratches, specks, and other flaws.

More complicated in construction than the diffusion enlargers, and more expensive, are the condenser type. (See illustration, page 45.) In a true condenser enlarger a "point" source of light is used. This is a clear incandescent bulb, with the filament made as small as possible.

A set of two plano-convex condensing lenses rests in the enlarger head, directly under the light source. The convex (curved) sides of the condensers face each other; the plano (flat) sides of the lenses are on the outer sides of the pair. The condensers pick up the image of the light source and project it as a cone, the point of the cone (and of focus) being at about the diaphragm of the lens in the bottom of the enlarger. The negative is in the path of the cone of light; thus it is evenly and strongly illuminated. Rays of light going through the negative are highly directional. They are scattered by the silver image in the negative. The amount of scattering is proportional to the density of the negative. Thus there is considerable loss

of light in the highlight (densest) portions of the negative. In the print, these areas receive relatively less exposure and as a result the print tends to become more contrasty than it would be if made in a diffusion enlarger.

You'd expect condenser enlargers to reproduce detail well. They do—they also reproduce practically every minor scratch, dust speck and other flaw in or on the negative. However, true condenser enlargers, with clear bulb and no diffusing medium at all, are a rarity. Most so-called condenser enlargers diffuse the light slightly by using an opal glass enlarging lamp.

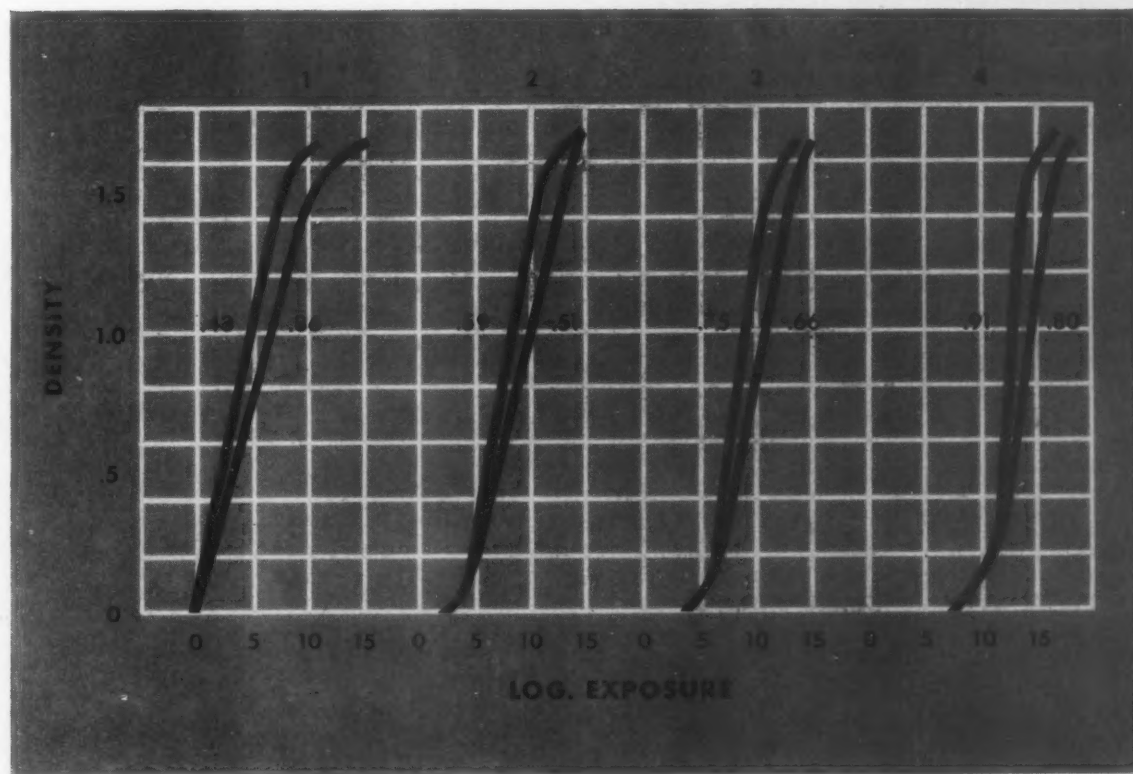
Compare them physically

Cold light enlargers have an outstanding physical advantage over conventional ones. They are much more compact. Condenser enlargers have tall lamphouses. Even diffusion types need a pretty tall cylinder to hold the bulb and opal glass, and to allow room for ventilation and cooling. Cold light enlargers have flat, pillbox shaped heads. This means a lot in a cramped darkroom, or for the apartment dweller who has to store his stuff between printing sessions.

As between the grid and circular fluorescent types, the latter are lighter to handle. Starting coils are usually located at or near the base of the enlarger, leaving only the lightweight lamphouse to raise or lower for focusing.

Users of condenser enlargers find that when they try a cold light enlarger the enlargements have a little less contrast than they are used to (*Continued on page 97*)

Curves show how each of four paper grades, indicated by numbers 1, 2, 3, 4, reacts to the same negative in condenser and cold light enlargers. Left hand curves are steeper, were made by condenser type; larger numbers adjacent show higher contrast than in cold light curves, right. Note that contrast of cold light type on each grade is higher than condenser contrast on next softer grade of paper, showing contrast loss with cold light is less than one paper grade.



beauty around the world:

PARIS

photographs by ROGER COSTER

THIS month our stopping-off place in searching for exotic beauty is Paris, the City of Lights. Naturally, three photographs can scarcely do justice to the numbers of beautiful women in France's capital city, but we think this triumvirate is a fair sample. These girls are all fashion models and were photographed in a dress salon by Roger Coster (who also photographed the Gitanas of Spain in our January, 1951, issue).

Coster used simple equipment: a Rolleiflex, a tripod, No. 5 G.E. flashlamps, to do his job. He also used a technique which might be a good one to emulate the next time you have a pretty girl before your camera. He saw to it that each young lady was dressed in a costume she felt most becoming, that her hair had been freshly combed, that she felt at her best. He then used the simple props of the salon for backgrounds—a chair, a window, a floor. And you'll notice he didn't ask for a frozen smile. The result? Three very sultry looks—and one of them aimed right at you!

We at MODERN would like to know which countries you readers would like to have us visit on our worldwide photographic jaunts. Perhaps you have a particular spot in mind for a future trip—or some pictures of your own. If so, write us at 251 Fourth Ave., New York 10, N. Y.

Far right: Coster posed Fabienne Velleaus, one of Paris's top fashion models, sitting on the floor leaning against a chair. Taken with a Rolleiflex, two No. 5 G.E. flashbulbs. Left light high and toward the front, right high and back.

Top, right: Colette Neyret, another Parisian beauty, also was photographed with flash. One lamp, placed left and forward, highlights face and shoulders. The other, used as a backlight on the right, gives a halo effect to the model's blonde hair. Also taken with a Rolleiflex, f/11 at 1/50 sec.

Lower right: 17-year-old Pierrette Monier has green eyes, gold hair. Coster used the natural sunlight streaming through the window for illumination and supplemented this with one No. 5 flash, held high and slightly left of center.







Left: Roof top and the Empire State Building provided setting for dancer. Speeded box camera shutter even stopped shoelaces. **Right:** Close-up lens was placed over camera lens for this Verichrome portrait taken by light of one 60-watt bulb.

CAN YOUR BOX CAMERA DO EVERYTHING?

"Almost," says 22-year-old Chris Lecakes, who shoots action, close-ups, and color with a 30-year-old box camera.

by HERBERT KEPPLER

PITY the poor box camera, one of amateur photography's major whipping boys. If a picture is too dark, too light, full of fingerprints, smudges or scratches or produces photographs of aunts, uncles and cousins with heads or feet chopped off, the camera owner moans, "What can you expect from a box camera?"

Actually, according to Chris Lecakes, a 22-year-old U. S. Steel Co. employee, you can expect just about everything. Everything to Chris means color, action, close-ups, portraits or landscapes.

Another popular anti-box camera slogan is that box cameras have poor lenses and the pictures taken with them will be soft or blurred. Forget about it. Chris' favorite size for enlargements is 11 x 14 inches—and the prints aren't blurred!

Not just any box camera

Chris admits that just any box camera won't do. Some have good lenses, some don't. In the past eight years, he has handled over a dozen box cameras. At present, he owns two which fill the bill. Both were bought for a dollar apiece at second hand shops. One is a 2A Box Brownie, vintage 1920, the other a 130 Brownie, of about the same era.

Most of Chris' work is done with the 2A camera which produces a negative of $2\frac{1}{4} \times 3\frac{1}{4}$ size. It has three lens openings, approximating f/11, f/16 and f/22.

The first few years he owned the camera, Chris stuck to landscapes, buildings, and statues. He used no filters or other attachments. He became dissatisfied, however. He couldn't get close enough to make portraits and his skies always seemed washed out. So he bought a plus 1 portrait attachment plus red and yellow filters which he fastened over the box camera lens with rubber bands. He compensated for the loss in speed caused by the filters by using Super XX Film. To take pictures with the portrait lens, he merely followed the directions that came with it so far as distance tables were concerned. With this portrait lens and the 2A Brownie, he produced the portrait on page 50. The exposure on Verichrome film was made at f/11 by the light of one 60 watt bulb.

At about the same time, Chris decided he would like to do some action photography. Why not with a box camera? He knew that the average box camera shutter speed was about 1/30 sec., a speed which could hardly stop action. The problem: How to speed up the shutter? Chris had read about speeding up shutters with

Resolving power of box camera lens is amazing, considering man on steps was at least 50 feet from camera.





Above: St. Patrick's Cathedral in box camera study. A red filter was used to bring out clouds on Super XX film. **Below:** Handball game is almost stopped cold by speeded shutter. Film was processed in "souped-up" developer.



rubber bands but decided there must be a surer and easier method of achieving his aim.

Speeding up a shutter

He examined the shutter of his box camera closely. Like most box camera shutters, this one consisted of a flat metal disk with an elliptical aperture—an elongated hole—in it. When the shutter was snapped, the disk revolved letting the aperture pass behind the lens and exposing the film.

Chris reasoned that if he shortened the length of the elliptical hole, he would actually be exposing the film for a shorter duration, thus speeding up the shutter. Taking care not to damage the lens or the shutter, he taped up the hole using adhesive tape, leaving a smaller opening.

The camera now had a faster shutter, but Chris didn't know how much faster, and under normal conditions, even with the fastest pan film, he'd probably still get underexposed negatives. So he bought Hydram, a solution which is advertised as speeding up film emulsions when added to the developer. Then he tried developing some negatives in D-76 with Hydram added according to the directions. He found that he did get a thinner negative and more grain, but he was able to get quite suitable prints by printing on Varigam paper. Whether it was a result of the immense latitude of the film he was using (Super XX) or the Hydram, he didn't know. In any case, he obtained results which were enlargeable to 8 x 10.

Testing the shutter

Chris then began testing his speeded-up shutter by covering half the hole. The results indicated he was just about doubling his speed of 1/30 sec. By covering half again, the speed seemed to double again. He finally covered all but a narrow slit which, according to the action shots he obtained, seemed to give him about 1/250 sec.

He explained the project to a friend who had a Compur shuttered camera with a top speed of 1/500 sec.

"It can't be done," the friend told him. "Sure, it will work with a focal plane shutter because the shutter is right next to the film, but it won't work when the shutter is next to the lens."

Chris merely took a picture out of an envelope he was carrying and shrugged his shoulders. The picture showed a boy playing handball. It certainly wasn't taken at 1/30 sec. (See photograph of handball player, page 52.)

Now color

Once he had settled the speed question, Chris turned his attention to color. He had shot Kodacolor with his 2A Brownie but he wanted to try Ansco Color. He bought a few rolls of indoor Ansco Color and some 500 watt A25 floodlamps. He put four lamps on the line, posed his 23-year-old wife, Pat, against a blue background—and (Continued on page 84)

Tungsten type Ansco Color, five R-40, 300 watt floods, an Enteco UV-15 correction filter, and an exposure of 1/2 sec. were used by Chris Lecakes to take this portrait of his wife with No. 2A Brownie box camera.





EVER take time off to look at all those negatives in your files? Ever look back on an accumulation of years of work and try to make some judgment on it? Take out old negatives and print them again—and discover something new in them? And then sit down and try to decide how well you had succeeded in reaching your goals—and where you wanted to go with your work in the future?

That's just what Arnold Newman did last month in his show at the Camera Club, in New York City. He showed 110 pictures, in eight groups, covering the years from 1938 to 1951. And the judgment of the public was that 33-year-old Arnold Newman had done a pretty good job in those 13 years.

The Newman show varies in subject matter. There are portraits, abstracts, documentaries, industrial scenes, and color. We asked Newman why the range—and he said that he felt subject matter and content should be disregarded. That, after all, his photographs were meant to represent a consistent manner of visual thinking. And that this visual thinking applied to all subject matter. He added that when he first began to work he was interested in surface values, as a painter or etcher might be. And that he sought these values in portraits as well as the sides of houses.

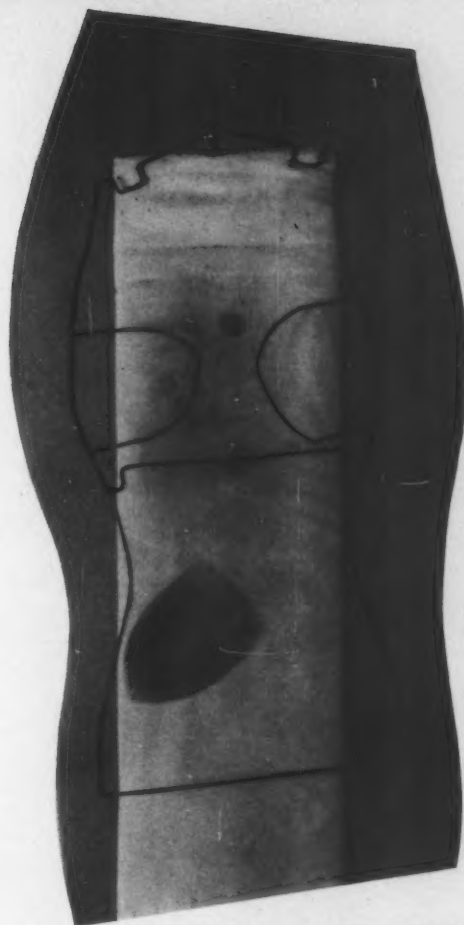
The abstracts are not matters of content, but of form. The documentary studies cross the lines of the abstracts and portraits—blending subjects and forms. The portraits for which Newman is best known will be the major concern of this article.

Artist series brought fame

Newman first became known for his series of portraits of artists which he began in 1941 and is still working on. Included in his list are such names as: Marc Chagall, Salvador Dali, Piet Mondrian, Chaim Gross, etc. (Because of its interest to photographers, MODERN chose to show you a double portrait—the late Alfred Stieglitz and his wife, painter Georgia O'Keeffe.)

Newman's method of work on this series is to visit the artist in his studio. He says that it is easily possible to associate visual forms with the artists. Example: when he photographed Mondrian, he surrounded him with the straight lines and planes of an easel, forms characteristic of the artist's work. When he did Stieglitz and O'Keeffe, the background was as clean and simple as her work, as pure as his. He tries never to use paintings as backgrounds. There is one

Left, one of a series for *Life*, to show what art museums throughout the country were collecting. Each photograph was planned down to the inch before Newman left New York. This is the curator of the Brooklyn Museum. Photo © Time, Inc.



Taken in 1939 and titled "Shapes," the above photograph demonstrates Newman's fine use of non-rectangular proportions in abstract photography.

ARNOLD NEWMAN looks back...

by Jacquelyn Judge



exception to this rule. The portrait of Chagall shows a painting—but it is turned on its side!

Newman does plan backgrounds and builds them. But he uses as his raw material whatever is around the artist's studio. He does not add props for literary purposes. (That is, if the man has a gambler's reckless spirit, he does not indicate this by enlarging a playing card and tacking it up on the background wall.) He is meticulous in his use of props, and will move them two inches or three after he has taken a worried—and long—look into the ground glass of his 4x5 Meridian view camera.

He uses a black cloth viewing hood and a tripod. This is necessary because of the long exposures.

Contrived or candid?

Newman's portraits are quite frankly posed. There is no pretension on his part that they are anything else. He defends his school of portraiture by saying: "Candid portraits are indications of the moment. They usually are not typical over a long period of time."

Newman will tell you that he is after a portrait which is a "common denominator" rather than a thin slice of the moment. He uses the word "neutral" to indicate his

goal. For example, if the person to be photographed is turbulent in spirit, Newman will work for a moderation of that turbulence.

A complete wedding

To him portraiture is no single emotion, no single pose, but a complete wedding of many factors. He adds that no *single* portrait is all-inclusive. Portraiture is a form of biography. And the complete series is indefinite in number—if it is to tell you all about the man. (But for that matter, which written biography has succeeded in being all-inclusive? Take the incredible number of books written about Franklin Delano Roosevelt, all revealing different facets of the same man's personality. Thus it is with good portraiture.)

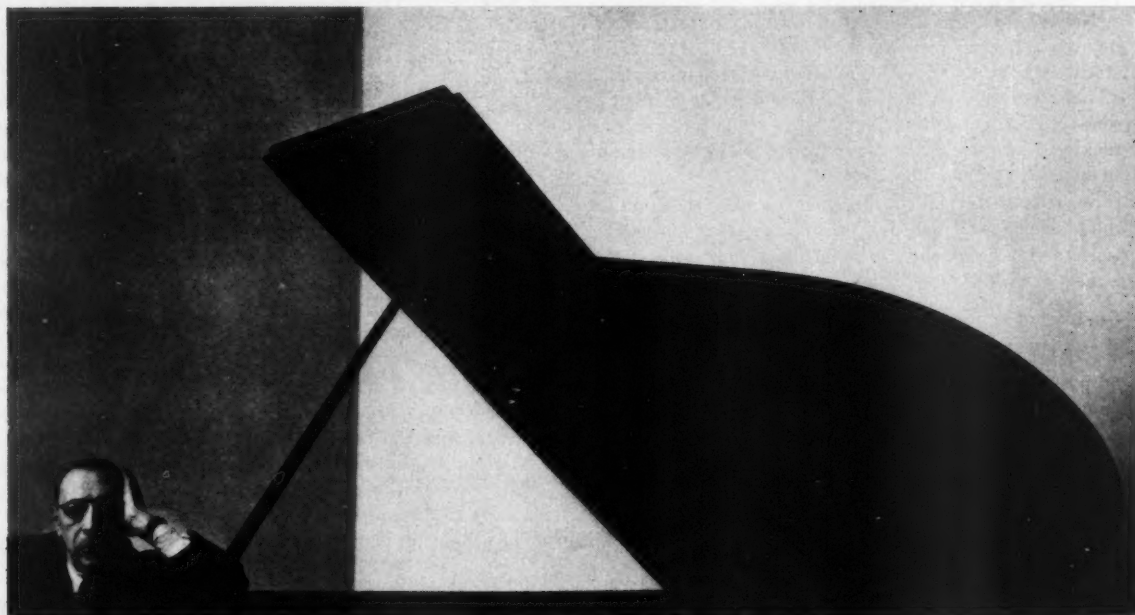
All this does not mean that Newman believes in "head-clamp" methods. Quite the contrary. He works to put his subjects at ease. He believes that they must be aware of him and the camera. And that they are not passive objects, but must be active participants in the sitting. They must know what the photographer wants and be willing to try to give it.

To this end, Newman works like a movie director with



◁ Left, a first picture. In 1938, when he was working in a commercial portrait studio, Arnold Newman became fascinated by the possibilities of the photographic medium. He borrowed a 2½ x 3¼ Contessa Nettel and went for a noon-time walk. Result? Study of mother and child.

△ In 1947, Newman was assigned by *Fortune* magazine to photograph his home state of Florida. He looked upon this as an excellent opportunity to show people a document different from the beach and girl publicity photos associated with the state. Herd of cattle is typical shot.



Portrait of composer Igor Stravinsky has so captured attention wherever shown that it has almost become Newman's trademark. This is an example of forms (piano, two-toned wall) providing a functional, naturalistic background.



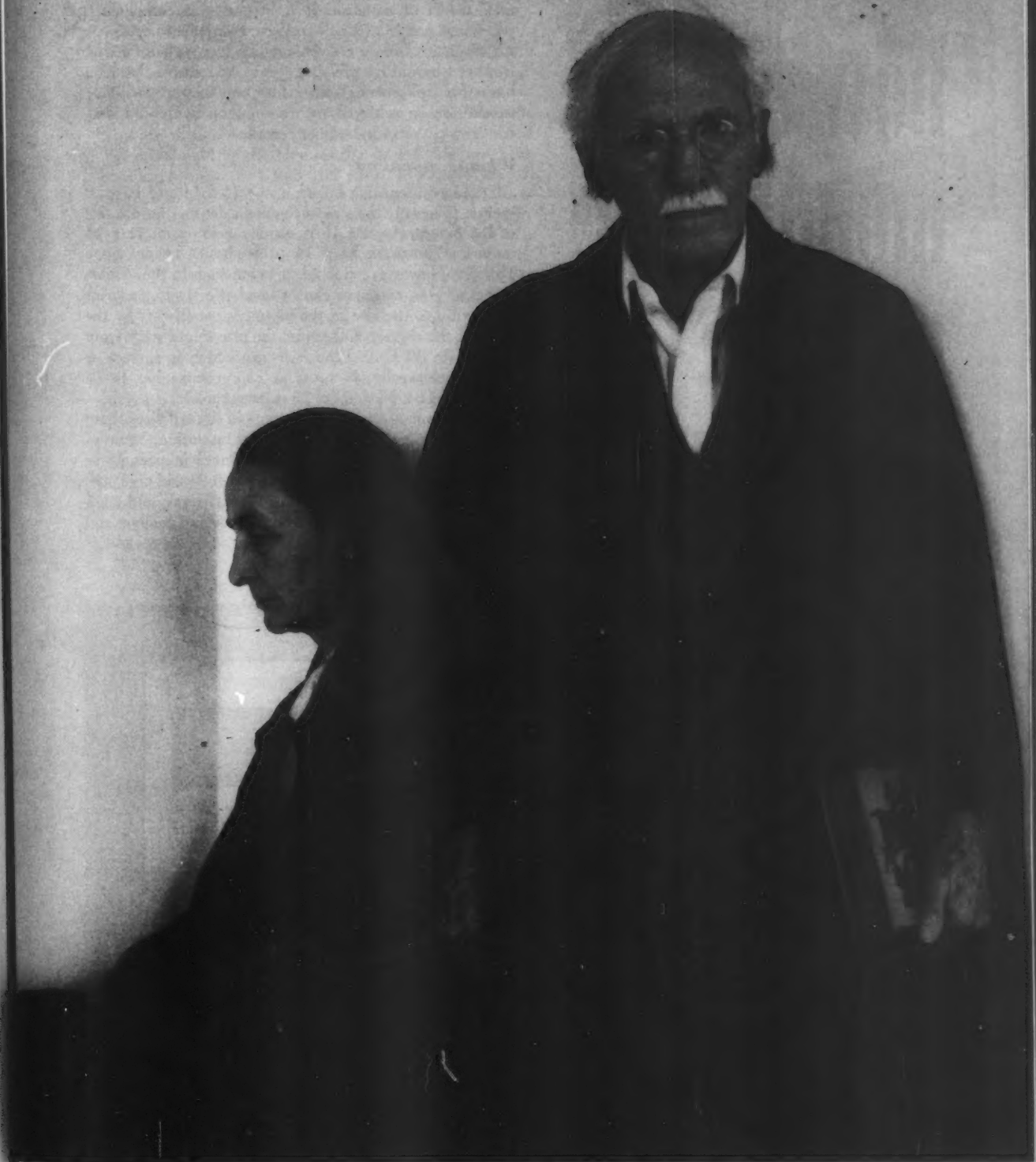
Newman does not confine himself to the studio and arranged props. In this case, he photographed actor John Garfield against a patterned background—a flight of steps. Great appeal lies in simplicity, natural light, tousled hair.

a new and valuable property. He talks to his subjects. He gets to know them. If possible, he calls on them ahead of time—even on assignments—to see what their offices, homes, or studios are like. He notes which expressions are most characteristic. He spots little mannerisms. He studies the man's work ahead of time, if he is a painter; reads his books if he is an author; peruses newspaper clippings if he is a public figure. He tries to put his subjects completely at ease. . . . And how do you know when your subject is at ease? Newman says "a kind of sleepiness overcomes him."

And it is sort of necessary for "a kind of sleepiness" to overcome a Newman subject because the exposures are long. They vary from $\frac{1}{2}$ second to 16 seconds! The usual range is 8 to 10 seconds. There are photographers who complain that this length of time is impractical. "People won't sit still that long," they'll tell you. Well, that just hasn't been true in Newman's experience. Even such a busy man as Secretary of State Dean Acheson sat still for 16 seconds—with all his phones ringing and people scurrying in and out.

He doesn't mind commotion

So far as Newman is concerned, by the way, people can scurry in and out while he is working. He's no temperamental genius who demands all activity must stop when he goes to work. As long as the surrounding activity doesn't bother his subject, it doesn't bother him. The reason for this is clear after watching the photographer at work. He is concerned with just one thing—the photograph. He's got a single track mind. And people can cook lunch or engage in debates over politics in the same room with him—but (Continued on page 94)



Double portrait of painter Georgia O'Keeffe and husband Alfred Stieglitz was taken in 1944. It is part of a series on artists which began in 1941 and is still growing. Newman strives for portrait and background to suggest spirit of artists' work. Here, O'Keeffe's stark simplicity, Stieglitz's purity.

how to mount your prints...

by PETER GIBBONS

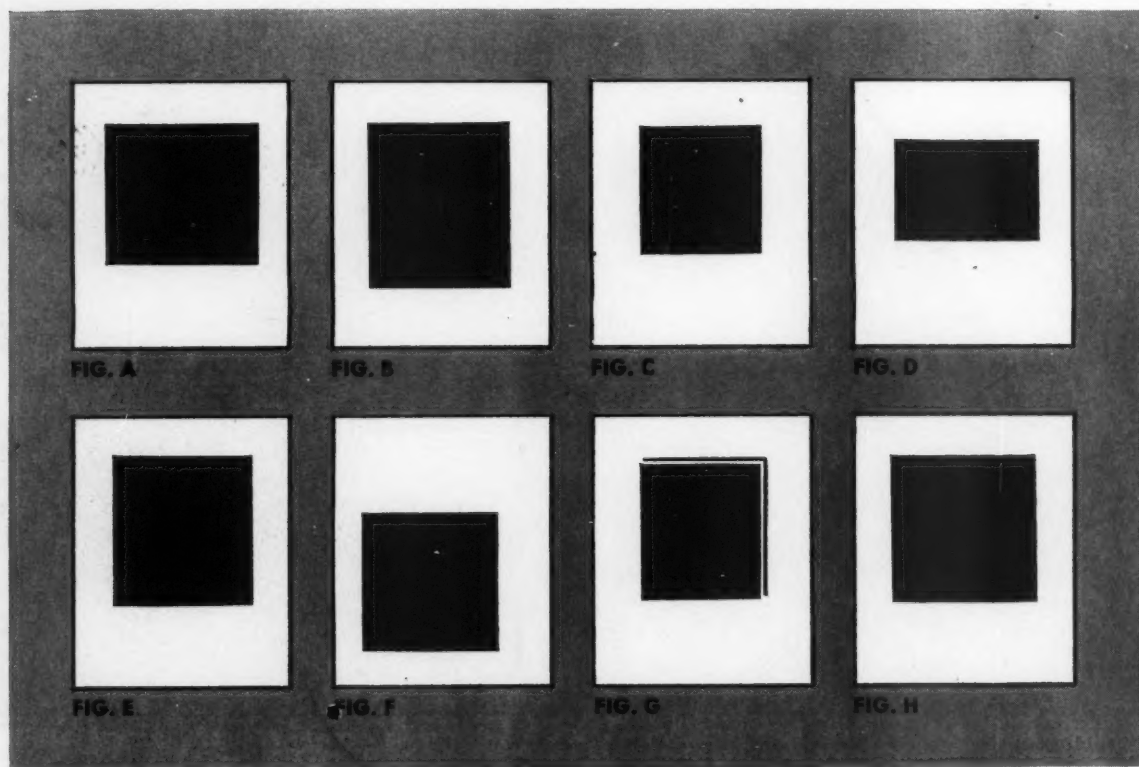
Instructor, School of Modern Photography

ANY print worth showing is worth mounting. There is no limit to the beautiful and interesting effects that you can achieve with a few minutes' time and a few pennies' worth of material. It need not be a complicated procedure nor is a lot of expensive equipment necessary. Although it is more convenient to work with a tacking iron and mounting press, it is not imperative that you have this equipment. With a little more effort the same results can be achieved with a common household electric iron or by using rubber cement.

What to mount on

Standard mounting boards come 11 x 14 and 16 x 20 inches. Generally the size of the print determines the size of the mount. An 8 x 10 is usually best on an 11 x 14 mount, whereas an 11 x 14 print should be put on a 16 x 20. However, personal taste enters into the discussion and even extremes can be used effectively. In print competitions, the size of the mount is usually set by the rules of the contest. Otherwise the size might vary from 1 x 1½ to 30 x 40. Who is to say which is correct or proper? Generally, however, a compromise has to be made and 11 x 14 or 16 x 20 is acceptable.

Although mounting boards come in limited sizes there are other materials quite suitable for mounting. Some of these are illustration board, which comes in sizes up to 30 x 40 in various thicknesses, and Masonite and plywood, which come even larger. Both of the latter two, although more expensive, add much more rigidity and support and are ideal for mounting when the print is large and is



Figs. A, B, C, D represent normal print positionings; E, F, G, H show how action in photograph (represented by arrows) can determine mounting and give you a much less conventional but an equally balanced product. (See text.)

to be mounted with no border. Both rubber cement and the dry mounting tissue will adhere to this material and the conventional procedure can be followed.

Print placement

Prints are generally mounted equidistant from both sides with more space at the bottom than at the top. While there are no strict rules governing the placement of prints, this suggestion is offered as a guide in case you are in doubt. Many people feel that the distance at the top should be the same as that at the side, but I am in disagreement with that and offer Figures A, B, C, D as reason. These are considered conventional methods of positioning a picture on the mount and can successfully be used in the majority of cases. However, I feel it is again largely a matter of opinion and personal taste. More important, it is the subject matter and arrangement which dictate the position of the print on the mount.

Many times a picture can be improved by placing it asymmetrically. In fact, in many instances to have freedom of movement and keep the eye within the picture, it is necessary to move the print into one of the corners or to one of the sides. This will hold the picture together by leading the eye into the picture instead of out.

Without getting into a discussion on composition, it can be said without too much danger of contradiction that most good pictures have movement and lines of direction. If this movement can be controlled and kept within the picture by unorthodox placement of the print, a deviation from the conventional placement is justified. This type of placement, however, should not be used merely to obtain startling or bizarre effects but should be done only with sound reasoning behind it or to enhance the composition of the picture.

Origin of movement

Another factor which must be taken into consideration besides direction is the origin of the movement. This might be considered as the point in the picture where the eye starts to follow the line of direction, or where the eye enters the picture. It can be controlled by the placement of the print on the mount. If the print is moved off the center of the mount and there is a great deal of space on one side, it might appear at first that this space is wasted. But this space is not unused; it is necessary to give the picture freedom of movement and prevent the picture from giving an oppressed or "pent-up" feeling. This is especially true when the movement is close to the edge of the print and is going out of or away from the center of the picture. (See Fig. E.) Here more space has to be added to prevent the movement from getting away. (See Fig. F.)

This is what is known as balance and is the element in composition which makes the picture "feel comfortable." Figures F, G and H show how prints can be improved by correct placement on the mounts. The arrow indicates the origin and the direction of the movement.

Borders

Another device used in mounting to create interest and improve composition is the use of borders. These borders are formed by ink or pencil lines or by the use of "step-off paper." This paper comes in many colors. Step-off paper is available at most artist supply or pho-



Fig. 1. Positioning the print on the mount is the first step taken in either dry or rubber cement mounting.

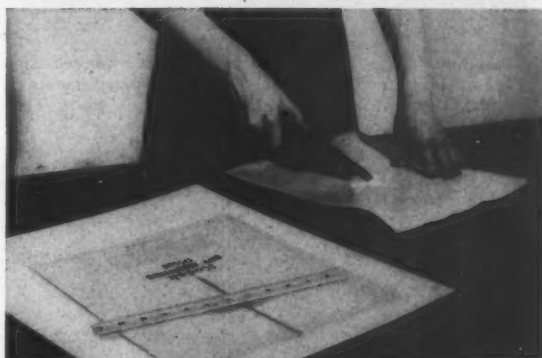


Fig. 2. When using dry mounting tissue and tacking iron, tack center of dry mounting tissue to center of print back.



Fig. 3. If household iron is used in place of tacking iron, set controls on "rayon" or at "low" to avoid scorching.



Fig. 4. With household iron, fasten tissue at four corners to the mount. (Turn page for further illustrations.)



Fig. 5. If a tacking iron is used to fasten corners to mount, the procedure is exactly the same as in Fig. 4.



Fig. 6. A mounting press is the easiest way to mount prints after tacking is done with household or tacking iron.

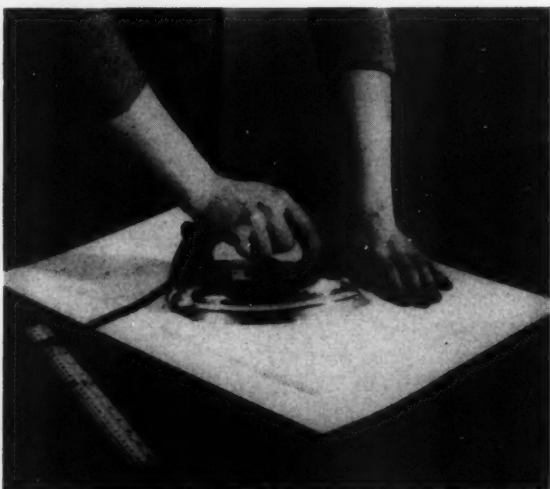


Fig. 7. The household iron, again set on "rayon" or "low," will do a serviceable job in smoothing down print.

tographic stores and can be used to add interest to your pictures and improve composition. This paper is generally used as a transitional step where there is little contrast between the print and the mount, or the contrast is undesirably extreme. It can also be used to control movement and direction in the picture. The print is first mounted on the step-off paper and the step-off paper is trimmed to give the desired border and then fastened to the mount.

Borders can be used for the same purpose that the unconventional mounting is used—to control the movement of the picture. If the movement is out of the picture, instead of moving the picture into a corner, a border can be placed on two sides of the print to arrest the movement and keep it within the picture (Fig. G). This can be done with ink or pencil lines or with step-off paper on two sides only. This is an alternative to changing the placement of the print and can be done after the print is mounted.

A very effective and popular method of mounting prints is to run the print right to the edge of the mount and eliminate the white border. This is called "bleeding" and can be used to very good advantage whether the pictures are to be hung on the wall, carried in your portfolio to show your friends, or stuffed in your wallet. The technique in mounting in this method is the same as will be described and either the rubber cement or the dry mount can be used.

Straightening prints

Prints should be fairly flat before they are mounted. Ordinarily, if the print is dried in a print drier or between blotters, no abnormal curl will be present, but if the print is allowed to dry freely with nothing on top of it, the print will curl considerably. It must be straightened before mounting. This can be done after it has dried by holding it taut and drawing it across a slightly rounded corner. It is advisable, however, to prevent curling before the print has dried by treating it with a print straightening solution. Such a solution, made by Kodak and Ansco, is available at most camera stores.

Once you've decided on the placement of the print on the mount, you're ready to do the actual mounting. There are two methods: dry mounting, which requires the use of dry mounting tissue, and rubber cement mounting. Dry mounting is quick, clean, easy, and effective. It is permanent and lasting and yet if at any time you wish to remove the print you can easily do so. Its main disadvantage is that heat must be applied to the print and mount to make the tissue adhere. The use of rubber cement, although not as clean and quick as the other, is still a very economical and effective method of mounting prints. It is used by many professional and amateur photographers because it requires a minimum of equipment. It is not quite as permanent as dry mounting. The cement after a time hardens and loses its adhesive quality, especially if the prints are exposed to warm and dry conditions. Prints can be removed if you so desire by using a solvent or thinner, but care must be exercised if the print is to be saved for future use. This thinner is highly inflammable, so don't smoke or have an open flame near when using the liquid. Both the dry mount and rubber cement methods will be discussed here. Make your own choice as to which method is better. (Continued on page 90)



Fig. 8. In rubber cement mounting, first trim off all white edges evenly with trimmer or a sharp blade.



Fig. 9. Next spread the rubber cement evenly on the back of the print to be mounted. Don't spread too thickly.



Fig. 10. While the cement on the print is drying, spread the rubber cement on the face of the mounting board.

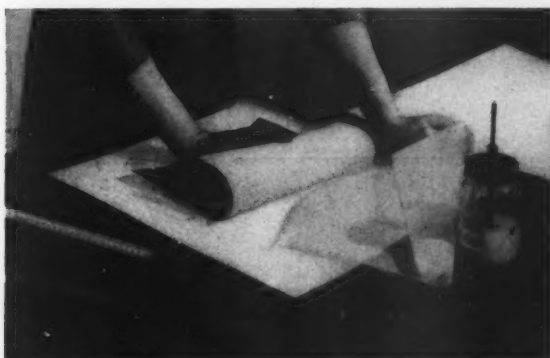


Fig. 11. After cement is thoroughly dry on both mount and print, place together with wax paper in between.



Fig. 12. Remove top piece of wax paper and smooth print down on board. Then remove bottom piece of paper.



Fig. 13. Carefully smooth out entire print surface by hand. Watch for small air pockets around the edges.

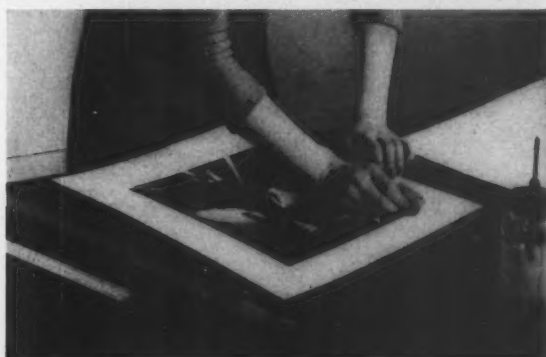


Fig. 14. With a soap eraser, remove excess cement from around edges of the print. Clean off fingermarks.



Fig. 15. Your print is now mounted and ready to be hung with Bracquettes and glass, or you can have it framed.



PICTURE SECTION

◁ A LITTLE GIRL stands at a window, her forehead and nose pressed flat against the pane. Maybe it's too cold to go out and play. Maybe she's watching for her party guests to arrive. Here is a picture possibility as close as the little girl next door. Taken with an Ikoflex ($2\frac{1}{4} \times 2\frac{1}{4}$), Zeiss Tessar f/3.5 lens, 1/100 at f/6.3.

RIGHT: LOOK DOWN from your window. The sidewalk is full of people—and pictures. Here, two lovers stop for a tender moment just beneath your nose. Distorted line of tree trunk adds dynamic interest to an otherwise placid scene. Taken with Ikoflex, f/3.5 at 1/100 sec. Film: Eastman Kodak's Super XX.



look out your window...

Take a tip from Peer Gynt: He was the character who wandered throughout the world searching for happiness. After many years, he found it—in his own back yard. Those of us who like to take pictures think that if we were planted in front of the Taj Mahal or a \$30-an-hour model, we too could take fine photographs. Well, sometimes taking a trip to far Cathay helps. But, it also helps to take a good, long look . . . out of the window, into our own back yard, down the street, around the corner. That's what Parisian photographer Izis did recently. Years ago Izis was a portrait photographer. After the liberation of Paris in 1944, he discovered the world beyond the studio walls. It is, as you can see on these six pages, a highly personal world—pregnant with picture possibilities. "Ah," you say. "Paris. Naturally. Anyone can take good pictures there." But, look again at the subject matter. A little girl, two lovers, a drying wash, a sleeping man, rain. Don't you have all these things in your own town? Look out YOUR window. And let your camera be your guide.



◁ BACKLIGHTING on a pair of ordinary wool socks gives a quaint effect to this simple photograph. You may not have flowers twining through a mesh fence on your back porch. But it is the bizarre shape of the sock stretchers which gives a fillip of humor. You can find amusing shapes on any clothesline. Taken with IkoFlex, 1/50 sec., f/16.

CLOTHESLINE PICTURE possibilities seem almost limitless. Take this pattern shot *below*, for example. Picket fence in shadow dominates foreground, contrasts well with pillow case background. Note how pickets seem to assume personality of sitting, shrouded figures. 1/50 sec., f/11.





NOW, TAKE A WALK down the street. You may find two men sleeping in the sun. Shoot one (*top, right*) through a ring on the wall, centering attention on his figure. Come in closer on the other man (*top, left*). He is a bakery worker and his clothes are covered with flour, which gives his figure a sculptured quality. Turning from him, you'll see a flower vendor (*bottom, left*) protected from the elements by a home-made shelter. Ask her to hold still and shoot $f/6.3$ at $1/25$ sec. What's that interesting shutter on that wall? How old and weatherbeaten it is. Now, to get the feel of the texture, stop the camera down to $f/16$ and expose for $1/25$ second. Use Plus X film.



IF YOU LIVE in an apartment house, you're probably well acquainted with what your neighbor keeps on his window sill. Izis likes his neighbor's birds, and the patterns their cages make when the afternoon sun hits them. You may find a milk bottle with a flower, or an herb garden.

NO DOUBT, just as you start to get interested in taking pictures, the rains will come. If so, don't be discouraged. Just go back and look out your window again. You'll see people scurrying down the street. And if you place a figure (preferably small, let's say five years old) to form a silhouette, you'll have another wonderful picture. 1/250 second, f/3.5

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It mustn't be true . . .

On 3rd July, 1839, the French Chamber of Deputies by command of the King, Louis Philippe, passed into law an agreement by which France acquired the invention of Jacques Mandé Daguerre and Nicéphore Niépce, and "donated it to the world." But not everybody believed the invention to be true. Just read what the learned editor of the "Leipziger Stadtanzeiger" thought of the news.

"Our greatest master of optics, enjoying the highest esteem at Lindenau and Leipzig and throughout Saxony and known everywhere to be foremost in his sphere throughout all the German-speaking countries, and who, moreover, is a burgher of Leipzig, has occupied himself in vain with this new French invention. But in spite of most careful work, he has not succeeded in making a picture with the camera obscura. If so great a German master of optics has thoroughly investigated a new invention and found it yielded no results, it is to be assumed that it can be nothing but a worthless Parisian swindle. Therefore all those intending to send their money away for a camera are warned rather to leave this money within German lands where better employment can be found for it.

"To hold fast fleeting mirror images is not only something impossible—as has been shown after a thorough German examination—but the mere wish to do so is sacrilege. Man has been created in the image of God and God's image cannot be produced by a human machine. At most, the imaginative artist, guided by divine inspiration and in a spirit of profound consecration, may, at the command of his genius, dare to reproduce the godlike human features without the help of any machine.

"Cleverer than the Creator"

"But a machine created by man on the basis of his calculations alone and intended to replace genius, has its foundations in the presumptuous wish to achieve the end of all creation. For

the man who conceives such a thing must think himself cleverer than the Creator of the universe.

"It is true that, so far, God has magnanimously tolerated in His creation the mirror, which is a vain toy of the Devil. Most probably, however, He has shown this tolerance so that female persons especially can read from their faces in the glass of the mirror their own silliness and conceit. No mirror, however, neither its glass nor its mercury, has so far been given permission by God to preserve human faces in its plane. Never has God permitted the tricks of the Devil, embedded in the mirror, to grow so wicked and presumptuous as to be able so easily to get within their power God's image, the face of man.

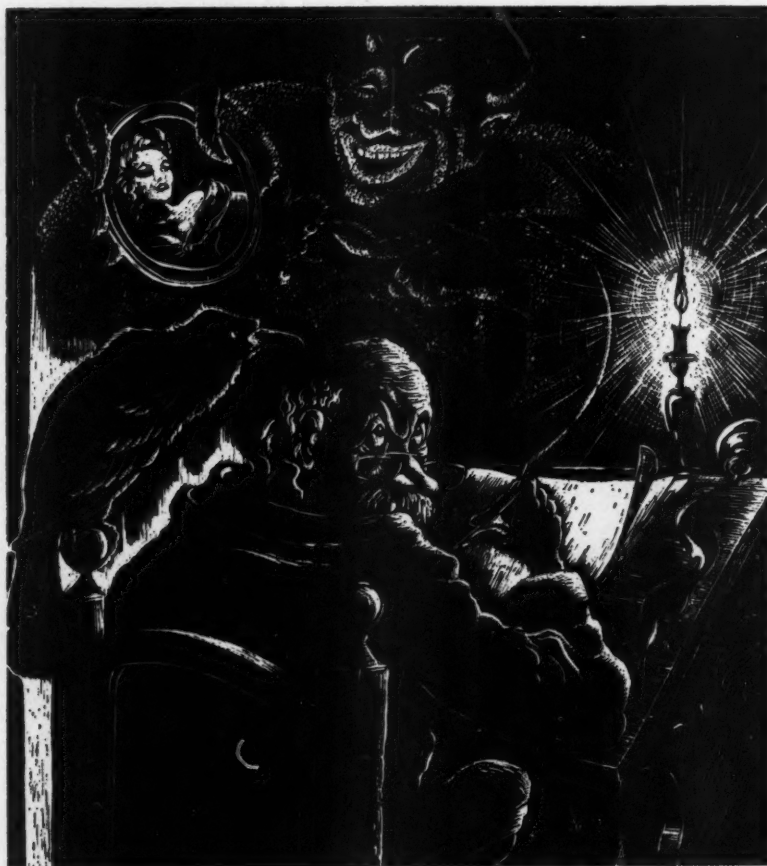
"Well then, seeing that for thousands of years God never permitted the reflection of a man in the mirror to remain eternally fixed, should we believe that this very God suddenly became disloyal to His eternal principles, allowing a Frenchman in Paris to bring forth into the world an invention of the most devilish kind? One must realize, after all, how un-Christian and horribly vain mankind will become once anyone, for coin of the realm, can order his mirror image by the dozen!

"An infamous lie!"

"An epidemic of vanity-maniacs will break out; for, when any face can be given away and admired cheaply by the dozen, man will become wickedly superficial and wickedly vain. And if this Monsieur Daguerre in Paris affirms a hundred times that with his machine he can fix human mirror images on silver plates, this must be called an infamous lie a hundred times, for it is beneath the dignity of the sober German masters of optics to be beguiled by so impertinent a statement.

"The invention of revolution and Napoleon's idea of making Europe one European empire of brethren—further than all these exaggerated ideas Monsieur Daguerre wants to go, for he wants to go further than the Creator of the world. If this were possible at all, famous men in olden times, such as Archimedes or Moses, would have attempted something similar long before him. But if these most clever people did not know anything about mirror reflections held fast, one may be permitted forthwith to call the Frenchman Daguerre—a fool of fools, just as anyone in Germany who places credence in this idiotic invention must be called an ass of asses."—Reprinted Courtesy Photoguide Magazine, London.

"It is true that, so far, God has magnanimously tolerated in his creation the mirror, a vain toy of the Devil."



From hopeful beginning
to happy ending . . .

KODAK EQUIPMENT PUTS YOUR MIND AT EASE

THE best beginning is one of these six fine Kodak cameras . . . each an able performer in both color and monochrome. Name your film preference—sheet film, miniature, or standard rolls—and you'll find it accommodated here. Check the features, design, and quality—and you'll find one or more cameras that exactly match your individual needs.

Prices include Federal Tax, and are subject to change without notice. Consult your Kodak dealer.



Kodak Reflex II Camera. Kodak Ektalite Field Lens more than doubles viewing brightness. Flash Kodamatic 1/300 Shutter . . . "synch" built in; twin Kodak Anastar f/3.5 Lumenized Lenses; automatic film stop. Takes 620 films. With case, \$155



Kodak Flash Bantam f/4.5 Camera. Takes superb pictures on 828 film. Has Kodak Anastar Lumenized f/4.5 Lens, 1/200 flash shutter, automatic film stop, and body shutter release. Price, \$57.50; Kodak Flashholder with Flashguard, \$11.50



Kodak Pony 828 Camera. Ideal for Kodachrome, Kodacolor, and black-and-white. Kodak Anastar f/4.5 Lumenized Lens, body shutter release, Kodak Flash 200 Shutter with built-in "synch." Takes 8-exposure rolls. Camera, \$29.95; Flashholder, \$11.50



Kodak Pony 135 Camera has features of the Pony 828, including Kodak Anastar f/4.5 Lumenized Lens and synchronized Kodak Flash 200 Shutter, plus automatic film stop and counter. Takes 20- and 36-exposure rolls. Price, \$34.75. Kodak Flashholder, \$11.50



Kodak Modelist II Camera has Kodak Ektar f/3.5 Lumenized Lens . . . finest in the $2\frac{1}{4} \times 3\frac{1}{4}$ negative range; 1/400 flash shutter; coupled range finder; automatic film stop. Takes 620 films. Adapts for film packs and sheet films. With case, \$312.50



Kodak Tourist Camera. Smartly styled . . . very compact . . . with ultra-steady shutter release on bed . . . eye-level finder . . . built-in "synch"; $2\frac{1}{4} \times 3\frac{1}{4}$ negatives. Price, \$24.50 to \$95, depending upon lens and shutter

Adapter Kit for Kodak Tourist Cameras Gives you a choice of four negative sizes with any f/6.3 or f/4.5 "Tourist." Includes any 828 film, monochrome or color. No. 828 Adapter Kit also available for Reflex II above.





From hopeful beginning to happy ending . . .

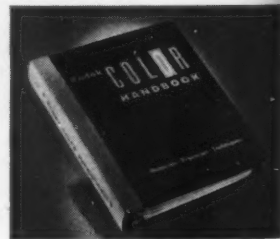
INDOORS or out, Kodak equipment gives you command of the situation. Kodak Filters control and balance the light for you . . . Kodak Portra Lenses bring you close for small subjects . . . Kodak flash units make you boss of the lighting scheme . . . and indoors, Kodak Vari-Beam lights, with beam-width control, give your creative judgment full rein. These reliable aids relieve you of worry; they let you direct your effort where it counts—on the subject, the composition, the picture idea.



Kodak Flashholder, Model B, with Flashguard (at left). Made especially for Kodak flash-shutter cameras. Accepts all midgem lamps; has plug-in for extensions. Button ejects used lamp. Complete with Kodak 2-way Flashguard, \$11.50. **Kodak Flashholder Extension Unit, Model B, with Flashguard** (at right). Use it independently or with a series of additional units. Turns in any direction for easy light control. Usable with Kodak Flashholder, Model B, or the original Kodak Flashholder. Battery container, reflector, long extension cord, and adjustable screw clamp bracket. \$12.75



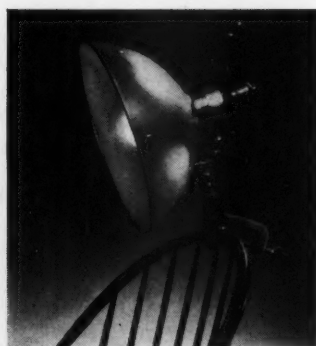
Kodak Portra Lenses 1+, 2+, 3+. For "close-ups," still and movie. Sizes to fit all popular cameras. Permit lens-to-subject range as short as 12 inches—even shorter when used in combinations. With double-extension bellows, permit larger-than-life images of small subjects.



Kodak Color Handbook. A complete guide for taking still pictures in color. Explains color fundamentals . . . procedure for taking high-quality color pictures anywhere . . . and gives full information on the various Kodak Color Films. 248 loose-leaf pages with 100 full-color illustrations. \$4



Kodak Photo Flasher. Can be used with any camera with "T" or "B" setting. Operates separately from camera. Takes one "C" battery, accepting No. 5, No. 25, SM, or SF lamps. Button ejects used lamp. \$1.55. A perfect gift when your boy or girl inherits the non-flash family camera.



Kodak Vari-Beam Clamp Light. Adjusts instantly, for extra-narrow, medium-wide, or wide beam of light. Big 12-inch reflector. Mounted on adjustable locking bracket attached to sure-grip padded clamp. Uses No. 2 photoflood. \$9.75

Kodak Vari-Beam Standlight. Provides extra-narrow, medium-wide, or wide beam of light. Tubular aluminum column telescopes from 3 to 5½ feet in height. Heavy steel base. 12-inch reflector. Uses No. 2 photoflood. \$15

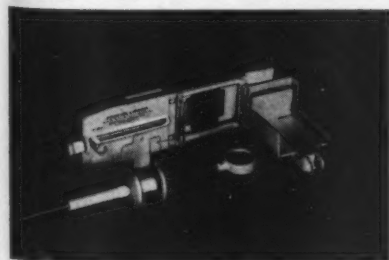
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KODAK EQUIPMENT PUTS YOUR MIND AT EASE

And the happy ending, of course—when you've shot miniature Kodachrome Film—is on your viewer or projection screen. Reliable Kodalide equipment assures you smooth showings... free of embarrassment... with every colorful detail crisp, clear, and bright. Whether your show is for the family, fellow amateurs at the camera club, or your own private enjoyment, your mind can be at ease—for the rugged, dependable construction and superb optical design of Kodalide Projectors and Kodalide Table Viewers won't let you down.



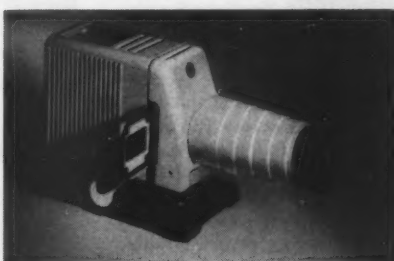
Kodalide Table Viewer, 4X. Wonderful for arranging or editing slides and home showings. New-type Day-View Screen retains full color quality even in lighted rooms. Three-element, Lumenized Kodak Projection Ektanon Lens, 50mm. $f/3.5$; heat-absorbing glass for protecting transparencies; two condensers for even distribution, three projection mirrors. Convection cooling; left- or right-hand feed; and focusing control. Operates on AC-DC, 100 to 125 volts. \$47.50. Carrying case, \$14.50



Kodalide Changer. Makes showing smoother, more enjoyable. Mechanism moves slides into showing position from magazine, then into receiving magazine. Projects 46 2x2-inch Kodalides with one loading. Fits Kodalide Projectors, Models 1, 1A, 2, and 2A. \$17.50



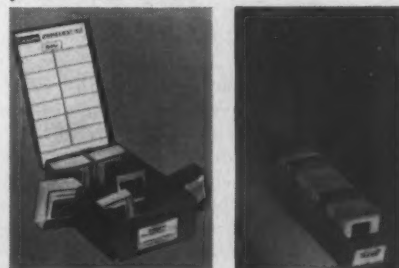
Kodalide Projector, Master Model. Powerful 1000-watt lamp permits huge screen images. Choice of five Lumenized lenses... the 5-inch $f/2.3$ Kodak Ektar or $f/3.5$ Kodak Ektanon Lens for home viewing; the $7\frac{1}{2}$ -inch $f/2.3$ Kodak Ektar or $f/4$ Kodak Ektanon for lecture rooms; and for auditoriums, the 11-inch $f/3.7$ Kodak Ektar. Turbine-type fan. Heat-absorbing glass. AC, 100 to 125 volts. Accepts 300- to 1000-watt lamps. \$165 to \$240, depending on lens. Carrying case, \$50



Kodalide Projector, Model 2A. Choice of: Kodak Projection Ektanon Lens, 5-inch $f/3.5$, for average-size room viewing; Kodak Projection Ektanon Lens, $7\frac{1}{2}$ -inch $f/4$, for extra-large rooms. Projects as wide as 84 inches with 5-inch lens; 150-watt lamp. Heat-absorbing glass. Elevation control. Accepts Kodalide changer (left). AC or DC, 32 to 250 volts. With 5-inch lens, \$49.50; with $7\frac{1}{2}$ -inch lens, \$59.50. Case, \$15



Lenses for Kodalide Projector, Master Model (at left and above), are all Lumenized for maximum light transmission and color purity on the screen. Each lens is supplied with a matching condenser, computed to assure maximum light output and uniformity of illumination with that lens. Prices range from only \$15 for the 5-inch Kodak Projection Ektanon $f/3.5$, to \$90 for the top-quality $7\frac{1}{2}$ -inch $f/2.3$ and 11-inch $f/3.7$ Kodak Projection Ektar Lenses.



Kodalide Compartment File (at left). Has 12 swing-out compartments... slides remove easily for viewing. Index on cover's interior. Takes 240 cardboard or 96 glass slides. \$3.75. **Kodalide File Box** (at right). Keeps slides in order... protects them from damage. Made of metal, it holds 140 cardboard or 55 glass slides. Separators permit filing by subject groups. \$1.50

Kodak

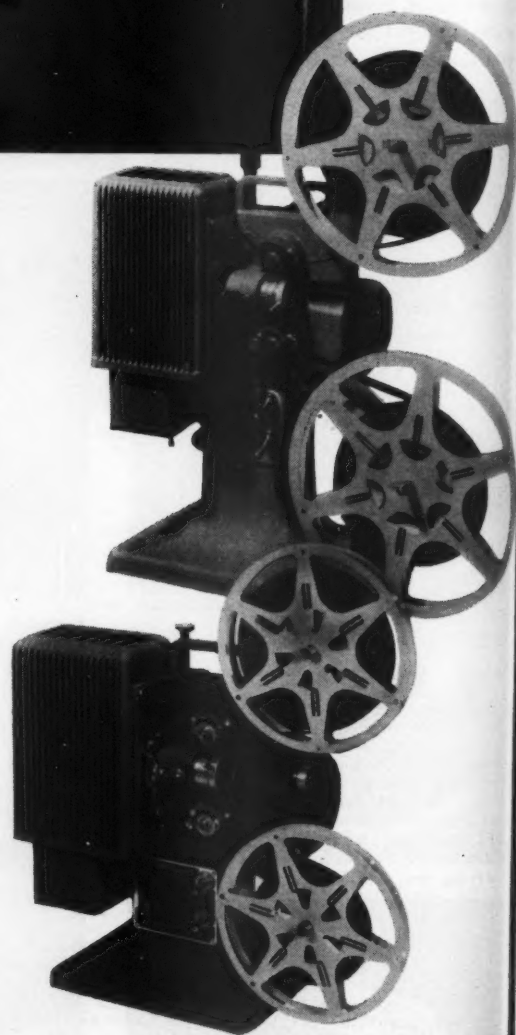


YOU'LL SHOOT AND YOU'LL SHOW *Proudly...* WITH THIS SUPERIOR 8mm. MOVIE EQUIPMENT

Two Fine "MAGAZINE EIGHTS" Now there are two models of the popular Cine-Kodak Magazine 8 Camera... ready to take superior 8mm. movies, indoors or out. The new $f/2.7$ model is priced very low for a camera of such excellence. Its 13mm. Lumenized lens needs no focusing... lets you start shooting faster... takes perfect-focus pictures every time. It accepts interchangeable lenses—38mm. $f/2.5$ and 40mm. $f/1.6$ telephotos. The $f/1.9$ model's Kodak Cine Ektanon Lens focuses from 24 inches to infinity... interchanges in a jiffy with any of eight wide-angle and telephoto lenses. Both cameras offer built-in exposure guides, pulsating scene-length indicators, choice of four speeds: normal, two intermediate, and slow motion. Both have extra-strong motors that run nearly a full minute. And both feature 3-second magazine loading that lets you switch film any time. Whether you choose the $f/1.9$ or the $f/2.7$, a Cine-Kodak Magazine 8 Camera means years of movie-making pleasure. With $f/2.7$ lens, \$127.50; with $f/1.9$ lens, \$147.50, Federal Tax included.

Two Fine "KODASCOPE EIGHTS" These two trim Kodascope 8mm. projectors have earned top approval from home movie fans everywhere. Newest is the Kodascope Eight-71A, a smartly styled projector with a fast-action automatic film rewind that makes showings easier than ever. An ultra-fast $f/1.6$ Lumenized lens combines with a 750-watt lamp for big, bright 8mm. movies. But when even greater picture size... or extra brilliance... is needed, the "Eight-71A" takes a 1000-watt accessory lamp for unsurpassed on-the-screen illumination. Runs coolly and quietly... threads easily... has 400-foot reel capacity for half-hour showings. The price—\$97.50. The efficient Kodascope Eight-33 is a fine 8mm. projector priced amazingly low. Small, compact, light-in-weight, the "Eight-33" features an excellent $f/2$ lens and 500-watt lamp for projecting bright, 3-foot-wide pictures. The Kodascope Eight-33 is a fine projector in every way. And best of all, it's priced at only \$65.

Prices subject to change without
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EASTMAN KODAK COMPANY
Rochester 4, N. Y.

Kodak

50 years of amateur movies . . .

by JACOB DESCHIN

Equipment Photographs, Courtesy George Eastman House

Do you have any old 17.5mm movie film hanging around your house? Perhaps you have a 28mm projector and a 21mm camera, or maybe it's 15mm, 11mm or 22mm.

You think we're just kidding with all those weird movie film sizes? Well, believe it or not, they're just a few of the many widths that amateurs have at one time or another used in these United States.

Since this year roughly marks the 50th anniversary of amateur motion picture taking in America, it would be interesting to see just how movies progressed and brought a little order to the chaos and confusion. And as this year also marks the 25th anniversary of the founding of the Amateur Cinema League, let's also see how the photographers themselves have developed.

From the very beginning, amateur film-making in America set foot on two separate paths, which ever since have been diverging even farther from each other.

One was named by Austin C. Lescarbours, onetime

managing editor of *Scientific American*, "the animated album of films of family, friends and pets." The other, in a recent historical survey of experimental cinema in America, was described by Lewis Jacobs, himself a noted experimental film-maker, as "a medium of artistic expression." Although the subject matter of the album has since expanded considerably, this dominating phase of movie-making amateur activity has continued essentially on a hobby level.

To group or not to group

It is characteristic of the two approaches that the experimentalist tended to work alone and the album maker yearned to share his experiences with fellow amateurs. It was inevitable that an amateur group, the Amateur Cinema League, should soon have been formed to satisfy the hobby photographer. It is significant that, even to this day, no such organization exists for the experimental worker. Moreover, the organization idea has continued



21mm camera-printer-projector of 1900.



Gaumont 15mm center perforation camera, 1900.

to grow so that now there are approximately 250 movie camera clubs throughout the country. These are in addition to the national associations, the League and the Motion Picture Division of the Photographic Society of America.

The league was started July 28, 1926, with the late Hiram Percy Maxim, president of the Maxim Silencer Co., as founder-president, and the late Col. Roy W. Winton as its first managing director. The original headquarters were in Hartford, Conn., Mr. Maxim's home town, and later in New York City. A few months later appeared the first issue of the league's official monthly magazine, *Movie Makers*, which recently celebrated the twenty-fifth anniversary of the league's founding.

By this time the amateur movie maker as a distinct personality had already been recognized in two periodicals devoted to his interests and in photographic publications, the forerunner of which was Herbert C. McKay's regular department in the magazine *Photo Era* starting with the December, 1922, issue. However, amateurs had been working unheralded in cinema ever since its professional debut in the late nineties, even though amateur movies did not become widely popular until about a quarter century later.

A passing fad?

When McKay started his pioneering column, a few wrong-guessers "damned the amateur motion picture as a passing fad," though within a short while they were obliged to recant. By 1928, Col. Winton was to proclaim: "An eighth art is at hand . . . the world has achieved a new medium of individual and personal expression. Whatever a man may have to say, henceforward, he has another voice with which to say it." And in 1932, R. Fawn Mitchell, writing in *The American Annual of Photog-*

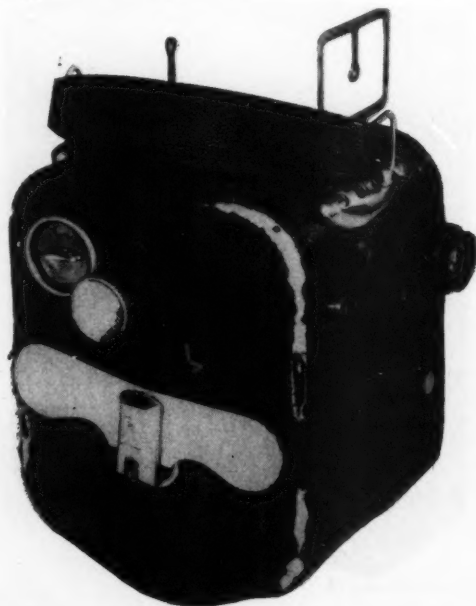
raphy, said, at last: "... there is absolutely no question but that amateur movie making has come to stay, and has now an established and recognized place in the field of human endeavor."

In the world of the experimenters a "foreign invasion" of new filmic expressions from Germany, France and Russia during the years 1921-1928 inspired the activity that persists to this day. The experimenters were, from the average amateur's viewpoint, a race apart and slightly crazy—young artists, poets, novelists, dancers, architects, all eager to embrace "the new art." They had little, if anything, in common with the rest, so that, although for a time some of them diffidently joined hands under the aegis of the Amateur Cinema League, on better acquaintance it soon became obvious they lived in different worlds. The parting was inevitable.

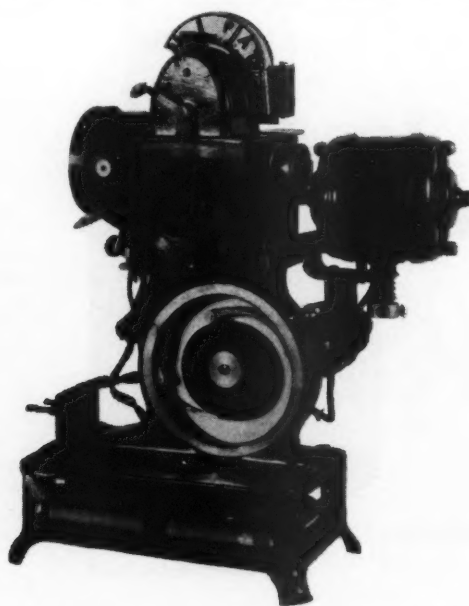
"Almost supernatural"

When movie making was very young, people were not too critical of the results, the phenomenon of pictured motion itself was so astonishing. The general reaction was similar to that toward the "candid" miniature camera in the early Thirties. Lescarbours reports the initial public response to the new hobby of movies in his *The Cinema Handbook* (1921), believed to be the first movie-making manual for non-professionals: "Truly, it (the screened movie image) is almost supernatural when experienced for the first time." And only the other day, Leo J. Heffernan, well-known New York amateur of many years' standing, recalled how twenty years ago amateurs so marveled "merely to see themselves moving on the screen" that they paid very little heed to technical standards.

The standards improved as manufacturers, noting the rise in interest among prospective amateurs, began to



Pathex 9.5mm spring wound camera of 1922.



Pathex projector, companion to Pathex camera.

pay some attention to such problems as film-size standardization and cameras that were simple to use and low-priced. The first amateur film size was the same as that of the professional, 35mm. Various attempts to introduce a practical sub-standard width for amateur use led to 28mm, 22mm, 21mm, 17.5mm, 16mm, 15mm, 11mm and 9.5mm. Many arguments ensued among amateurs as to which size was the most useful. As a result, the list soon was narrowed down to four, 35mm, 28mm, 16mm and 9.5mm.

Reversal film changed things

The 28mm width held sway for several years. Amateurs had to buy two rolls for each film, negative and positive stock, and pay for processing each. By this time safety film had been made available so that the fire hazard of the former nitrate base was eliminated. But "something wholly new" was needed to put amateur movies really on its feet, notes James W. Moore, managing director of the League, in his recent historical survey. That was 16mm reversal film (negative and positive in one), which was developed by Eastman Kodak's John G. Capstaff and announced and publicly demonstrated on January 8, 1923, by the company's research head, Dr. C. E. Kenneth Mees. A few months later equipment to take the new film width was placed on the market by Eastman Kodak, Victor Animatograph Corp., and Bell & Howell Co.

McKay was jubilant. Amateur movie photography really had arrived at last. He had just completed a book manuscript on *Motion Picture Photography for the Amateur* when the 16mm news broke. He quickly worked over the manuscript and, he writes, "... the first book on substandard motion pictures appeared shortly after the film itself."

(Continued on page 82)



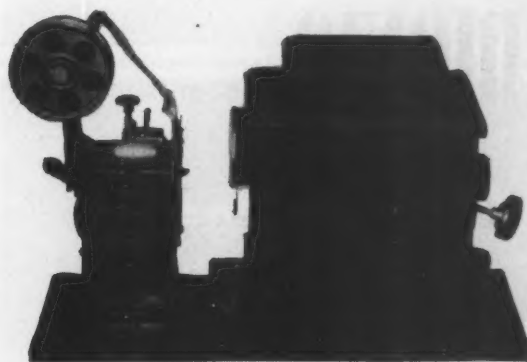
Cinema 16 probably represents the first attempt to build a mass audience for experimental films. Here we see such a film, an abstract, taking form before the camera.



A still shot from abstract experimental film utilizing animated modeling clay. Such films are within scope of amateur with basic equipment plus imagination.



Eastman 16mm Cine Kodak Camera, Model A, of 1926.



22mm Edison Home Kinetoscope projector, 1911.

To many amateur movie makers, the mention of writing a shooting script produces the same results as suggesting that they take castor oil.

Well, it ain't necessarily so. How do you get around a shooting script? Very simple. Don't use one at all. Take your movie first and arrange the continuity later. I know the system works because I've been using it for years. So instead of wracking my brains for prize-winning scripts, I begin by searching for prize-winning material. Last year I found it at the "Ice Follies 1950." This isn't too surprising since the 1948 and 1949 Ice Follies also furnished me with the material to win two other Mineola Fair prize cups.

How it all began

Let's go back to the first year I photographed the Follies, 1948. I went as a spectator but I brought along my 16mm Bell & Howell 70 DA camera.

The show was colorful and exciting. I shot away happily at production numbers, star performers—anything that looked good. Ushers tried to stop me a couple of times, but I pointed out that I wasn't using a tripod and furthermore I was bothering no one. I was allowed to continue. When I saw the films, I discovered they were interesting only to me, and served only as a lesson.

Sequences that should have had adequate footage were too short. Others that could have been covered with little

film seemed to drag endlessly. A viewer would get dizzy following the action back and forth from one end of the ice to the other. About 300 of the 700 feet of Ansco Color, tungsten type, I had shot were over- or under-exposed. I couldn't get close enough to the performers to get an accurate meter reading, and the lighting for the Follies is rather tricky.

Arranging it with the boss

I knew I could do a better job if I could get the cooperation of the management. I wrote to Oscar Johnson, one of the owners of the Follies. I told him I wanted to shoot a color film of his show, and he wrote back promptly. I learned that he is an avid amateur movie-maker and so are 18 other members of the cast.

Mr. Johnson suggested that I ask for him next time I came to the Follies, and I did just that. When I met him, I explained that I wanted to shoot the show from three different angles. He arranged to let me use a seat in the three places I had picked. I planned to shoot from an end loge, the side balcony and the end promenade, which is only three or four feet from the ice floor. This would enable me to get various viewpoints of the show which could later be spliced in sequence to make an interesting combination of angles. Then I decided to view the whole show and make notes on the most photographic scenes before bringing my camera.

making a prize-winning movie...

by SAMUEL FASS

16mm frames by the author



The author looking over a few of his prize movie awards.

Photo by Dale Riggs

I knew from my first experience that certain scenes do not photograph well. Violet light on the performers makes them look dramatically stunning, but in actual film footage it comes out like a few spangles shining in a coal mine. I ignored all scenes lit with violet spotlights when making notes on the program. On each scene that I intended to shoot, I indicated the best seat position from which to work. Some scenes I decided to shoot from more than one angle, on different evenings.

Proper location reduces panning

Whenever the action was really fast, I scheduled it for shooting at a time when I was at the end promenade. With fast action coming directly toward the camera, the photographer need pan less often and less abruptly. I calculated exposures in advance by counting the spotlights in the Garden. I figured that when all the spots were on a brilliantly-dressed single performer, the average exposure would be about $f/3.5$ at 16 frames per second. However, when the performer was using a dark-colored costume, I would use a stop of $f/2.8$. For production numbers when all the floodlights were on, and a large number of skaters were on the stage, I figured on shooting at $f/1.6$ or $f/1.9$ depending on the brilliance of the scene. For Hollywood-type dissolves, I would use an old-fashioned automatic dissolve which is no longer on the market. It cost me \$5 second hand and is perfectly satisfactory—although I've had to do a little work on it. This automatic dissolve usually provides a finish for the movie and is also used for fading in and out. I use a 3 second fadeout, wind the film back for 48 frames (there is a gauge on the rewind), then expose and fade in.

There is also a little trick I would use to give my Follies films a touch of Hollywood finesse. I would make the lead titles in advance, and make one title on a flat black background. Then I could wind-back this title and superimpose it on the opening scene of the show. (In a forthcoming issue of MODERN PHOTOGRAPHY, Mr. Fass will go further into the subject of titling, explaining how to get special effects for color titles with your own titler or with components available inexpensively at any photo store.)

I shoot the Follies, thrice

With all my plans made and a shooting schedule of sorts on my program, I again shot the Follies, in three separate evenings, using about 600 feet of color film. But this time, I spoiled only 30 feet out of the 600. In fact, even those 30 feet weren't spoiled; they just weren't quite up to standard.

The footage was nice and smooth. I used the unipod that I designed for myself instead of hand-holding the camera. This stand is in two pieces. It has a tilt-top for panning, and I can either stand it on the floor, or remove the bottom section and stand it on the seat. It has a rubber tip at the bottom and a leather strap so I can carry it on my wrist. While no tripod, not even a unipod, can be used without permission of the management of a show, I prefer to use one whenever I can get permission to do so. Just as in still photography, the tilt-top and stationary position of the camera seem to insure more careful composition and consequently more interesting effects, and lends a steadiness and smoothness in operation. (Continued on page 81)



For the big production numbers, I shot at $f/1.6$ or $f/1.9$.



All darkly-dressed single performers were shot at $f/2.8$.



I shot from end promenade when I wanted to avoid panning.



The stop was $f/3.5$ for brightly-dressed single performers.

FROM EYE TO CAMERA

By Ray Bethers. Designed to develop individual expression, this book deals with the tools used in making creative photographs: subject matter, light, variety, color, space and pictorial arrangement, as well as feeling, knowledge and experience. Illustrated, 130 p., 6 x 9, \$3.75.

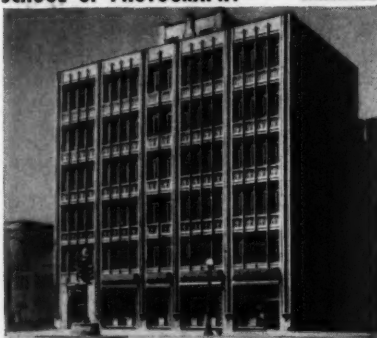
PROGRESS IN PHOTOGRAPHY 1940-1950

Edited by D. A. Spencer. A record of significant technical advances in photography all over the world, this book deals with equipment, the photographing of dimensions, sound, color, radiation, flash photography, the business and educational aspects of the field, and many other topics. Editors in United States, Britain, France and Switzerland have assembled material from 81 reports submitted by 68 authoritative contributors. 110 photographs, 75 diagrams, 464 p., 7 x 10, \$10.00.

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BARBEAU PHOTO SUPPLIES

OSWEGO

NEW YORK

Dr. Cinema Says

Do you have trouble exposing color film indoors? Here's how to do it.

From observation of amateur movies, and from plaintive queries aimed my way, I gather that we could do with a once-over treatment of indoor exposure for color. Those who film for fun seem to have quite a time matching the color from scene to scene or from reel to reel.

Several perfectly understandable factors are involved here, and once you're aware of them you'll do better. I'll take some of them up forthwith. First, however, I must assume that your light source is balanced to the color sensitivity of the color film you're using—in theory, at least. To be specific, your film is balanced for a color temperature of 3400 degrees Kelvin, therefore you must use regular floodlamps which are rated at the same 3400-degree color temperature. (Relax, we'll explain degrees Kelvin in a forthcoming issue.) You arrange your lights carefully according to diagram, you set the lens aperture correctly. One scene comes through with almost perfect color rendition. Another sequence on the same reel may be disturbingly different in color. Why?

Well, the lamps may have become blackened with use, which can produce underexposure. Or the line voltage may have fluctuated inexplicably while you were filming the second of the scenes mentioned. It's better to discard an aged, blackened lamp before it actually burns out than to let its weakened light spoil your color film.

Surfaces affect exposures

Room surfaces and size can affect exposure, too. A white or light-colored bathroom or kitchen affords such a good reflecting medium for light that you may have to cut down one stop to avoid overexposure. The smaller the room the more pronounced this effect will be. But a large room which is characterized by dark walls, woodwork, or drapes will soak up a lot of light, causing underexposure unless you allow for it.

Similarly, rough-textured surfaces absorb more of your usable illumination than smooth, gloss, or tiled surfaces do. In a room with textured wallpaper or rough-finished plaster (particularly if the walls and ceiling are neutral or dark in color), you may have to open the lens a half-stop or a full stop wider than normal to compensate.

The exposure meter will help you some under these various conditions, certainly. But in actual practice you have to mix common sense with meter readings, even going so far as to open or close the lens a trifle despite the

actual reading on the exposure meter.

Pronounced colors of room furnishings, walls, and rugs or carpets can throw your color off indoors just as green grass and bright blue sky can do it outdoors under some conditions. A carpet or a sofa which is brightly colored—particularly in red, green, or blue—can bounce a lot of colored light onto your subject. You may not notice this at the time, but the film emulsion usually will pick it up. I've seen (and filmed!) many examples of this phenomenon. One time I shot an appealing sequence of two children playing checkers. A set of red-bound books on a shelf nearby caught the rays from one of my floodlamps and bounced them back so as to make the kids look parboiled on one side. Another time, a rather vivid green carpet kicked green light up into a subject's face to produce a bilious appearance in the finished film.

You won't need to worry too much about this sort of thing unless the reflecting colored surface or mass happens to be catching a good deal of direct light from your floods. You can train yourself to notice, and rectify, such conditions as you size up a scene preparatory to shooting.

Even lighting desirable

Flat, even lighting frequently is desirable for indoor color movies, and this isn't always easy to achieve with conventional lighting. If you're filming moderate action of some sort—say, a card game, a small group playing musical instruments, or one or more children playing with toys—you may want to try something which approximates the lighting frequently employed in television and some professional movie work. Stretch two cords or wires, about four feet apart, across the room near the ceiling, and suspend your floods from this, with the reflectors aimed straight down. Obviously the more lighting units you can manage the higher the general illumination level will be. In a room of average size, two such cords or wires with anywhere from two to four reflectors hung from each should do a good job. Don't say I told you to overload the line circuit, however. If possible, take your current from two or more circuits, so as not to overload any one of them. This department will not be responsible for blown fuses.

The effect produced by this overhead lighting is one of shadowless, high-level illumination, which can produce excellent exposures and good color rendition. You'll be pretty safe in relying on exposure meter readings

PRIZE-WINNING MOVIE

(Continued from page 79)

When my film came back from the processing lab, I had a series of unrelated scenes, with no story. This gave me the pleasant job of fashioning a movie revue out of these scenes. I'm not bound by the order of the actual Ice Follies at all.

In editing the footage, I found it advisable to cut footage to suit the "tempo" of the action. Fast action calls for shorter sequences. Slower tempo for longer sequences, etc. It's best not to spare the scissors and spoil the film. When footage is poorly exposed, or when action runs out of frame, or goes too far in the background so as to leave an excess of dark areas, cut it out.

And music, too!

After the film was edited, I attended to the scoring. Musical accompaniment is played on my dual phonograph turntables through an amplifier and speaker. For some scenes, such as the one in which the girl skaters were supposed to be deer on a sled, I simply bought a record of "Sleigh Ride." Most of the skating was done in waltz tempo so I have acquired a large stock of Strauss and Chopin waltzes, some in 33 1/3 rpm and some in 78. For other scenes, I use a Recordio to take special music directly off the air. For the Follies, I cut a record of my wife's voice as narrator. She gave a brief history of the Follies and explained the tricky skating routines.

Other prize films that I have made have no more plot than the Ice Follies. They are also made "backwards"—no

shooting script. My black and white prize winner for 1950 was made at the circus. I'm not only a circus fan, but I am also fond of animals. In fact I've been photographing both stills and motion pictures at the Brooklyn Zoo for years. If I don't turn up for two Sundays in succession, the keepers call up to ask me what's wrong.

Samuel in the lion's den

For the circus sequences, I filmed inside the lion's cage. The lion wasn't young and he wasn't vicious—said his trainer—but I still felt like Daniel. I was sure that none of my friends would believe that I had filmed the picture from inside the cage so I handed my camera to one of the trainers and showed him how it worked. Then I put the lion through his paces, armed only with a whip and chair. Alone in the cage with the lion, he seemed to have grown surprisingly young and vigorous, but I waved my chair bravely and he roared satisfactorily. When I got out I discovered that the man who had held the camera for me had treated it like a still camera. He pressed the button once, then pressed again, real fast. Result—if you know when to look, and look quick, you can catch a glimpse of me in the lion's cage.

I'm not advising you to try shooting your first big scriptless movie in a lion's cage. But the next time an ice show, the circus, or a carnival comes to town, don't get all bogged down with a long shooting script. Grab that camera and go right to work. One of next year's crop of prize cups, medals or other awards may belong to you.—THE END

under such conditions of lighting.

Getting back to more simple technique, I'd be remiss indeed were I to omit mention of one amateur I once knew. This lad was a proud father of a few months' standing. He got a movie camera for Christmas, and decided at once to do a feature on the baby's activities. Using two floods in conventional reflectors, he followed carefully the simple, basic lighting and exposure instructions set forth in literature put out by the makers of film and lamps. No meter, nothing the least bit fancy—just a camera, film, a couple of lights, and a cardboard exposure guide or two. And his first indoor films came through with very nearly perfect exposure and color rendition throughout. So, it can be done the easy way, if you're satisfied with pleasing, but not spectacular, results.


I'm just lazy

We'll close the lecture this time with a bit of personal advice which may prove controversial. I'm asked, occasionally, as to my own practice in the matter of film type and conversion

filters for indoor color filming. Well, being lazy, I keep the camera loaded with daylight color film whether I'm shooting indoors or out. For artificial lighting I employ blue daylight floods. And I get color rendition which suits me fine. Sure, I know I lose something in emulsion speed rating by shooting indoors with daylight-type film, but it doesn't seem to cramp my style too much.

I realize that many experts insist that nothing works so well indoors as indoor or tungsten-type film, but I'll stick to my guns. I'll admit that a good man can do excellent work using the right film and the right filter on every occasion. He can do even better when he gets his mitts on a color temperature meter and a few more filters to balance the color temperature of the light to a nicety. By the same token, a good Technicolor crew, complete with impedimenta, can give you color films which are truly life-like. But it may take 'em a week to shoot five minutes of screen fare. With one film, no filters, and satisfactory results, am I complaining?—THE END

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50 YEARS

(Continued from page 77)

The announcement appeared thus in his book, which was published in 1924: "Recently, several cameras have appeared which use the new sixteen millimeter sub-standard film which was originally produced for use in the Cine-Kodak. This film is furnished in rolls of fifty and one hundred feet, but these are equivalent to one hundred twenty-five and two hundred fifty feet of standard thirty-five millimeter respectively. The one hundred-foot reel of sixteen millimeter costs six dollars, which is the total cost."

First amateur equipment

The first amateur equipment was offered by Eastman Kodak in June, 1923, as a "package" consisting of a Cine-Kodak Model A camera; Kodascope Model A projector and splicer; a tripod and a screen. The camera was box-shaped, had a fixed-focus f/3.5 lens and was cranked by hand. In the same year, Bell & Howell offered the Filmo 70-A, believed to be the first 16mm camera with a spring-drive motor, thus "freeing the hobby from the bondage of the tripod." Victor's contribution that fateful year was the Victor Cine-Camera Model 1 and the Victor Cine-Projector.

First turret camera

The first camera with a three-lens turret, the Filmo 70-C, was announced in 1927 by Bell & Howell. Panchromatic movie film was introduced in May, 1928, by Eastman Kodak. The Cine-Kodak Panchromatic film was followed in August of the same year with Kodacolor, a process involving viewing and taking filters plus a special aluminum screen. In 1929 RCA Victor introduced the first 16mm sound-on-film projector for home use. Other developments that followed during the next five-year period included the first 8mm camera, the Cine-Kodak Eight Model 20 with a fixed-focus f/3.5 lens and priced at \$29.50, with a projector at \$22.50; the first General Electric Photoflood lamp, the No. 1; Kodachrome film in April, 1935; sound on film, and in 1933 the Weston photo-electric cine exposure meter. Later came the magazine film-load device and a long line of accessories.

8mm film appears

The decade 1931-1941 was an eventful one for the amateur. The introduction of 8mm film in 1932 was a real break for that major portion of America's estimated million or so amateurs who shy away from the cost of 16mm film but can manage the lower cost of the smaller width. Kodachrome in 1935 suggested vast new possibilities. In 1932, a Ten-Best winner, Hamilton H. Jones' "Canadian Capers,"

introduced accompaniment by double-turntable music on disc. In 1933, Walter Mills' "Design" was the first 8mm movie to place among the year's Ten Best.

Getting down to business

While all these facilities were being made available, what were the amateurs doing with them? Plenty, one notes in turning the pages of the amateur movie maker's history. The League's membership shortly climbed to 2193 (it is now about 4,000). Two amateurs, Dr. J. Sibley Watson and Melville Webber, working in an empty stable in Rochester, produced an experimental film, "The Fall of the House of Usher," a 1,200-foot 35mm work that was hailed by the National Board of Review as "the greatest advance in the motion picture as an independent art since 'The Cabinet of Dr. Caligari.'" And just twenty years ago, the League initiated its annual selection of the Ten Best Amateur Films of the Year.

By 1935, in the years of the depression, the documentary film appeared to spark the American documentary film movement, which lately has fallen into decline. Soon after the war the experimental film returned to extend an influence more vigorous than ever. Late in 1946 the San Francisco Museum of Art offered "Art in Cinema," a series of experimental film shows that have been receiving wide support.

The experimenter's experiment

In the meantime, the experimenters, who were soon to be distinguished in name as well as approach from man-in-the-street amateurs, were pushing ahead with new forms. Toward the end of the first decade came the direct approach and naturalistic treatment, the exploitation of what Ralph Steiner called the "simple content of the cinema." Steiner's demonstration of what he meant was dramatically shown in his "H₂O," a study of reflections on water that won the \$500 Photoplay Magazine award for the best amateur film of 1929.

To seek greater goals

"I was interested in seeing how much material could be gotten by trying to see water in a new way," Steiner said in 1929 in commenting on his prize-winning film, "rather than by doing things to it with the camera." If not on the experimental then surely on this level, the album makers, with the high technical competence that many of them possess, can work imaginatively to achieve greater goals than those that now characterize most amateur productions."

—THE END

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BOX CAMERA

(Continued from page 52)

promptly blew out all the fuses in the house! The lines would take only 1500 watts.

He then tried three lamps but couldn't get the lighting results he wanted. Besides, although he was adept at guessing the exposure for black and white shots, color photography was much more exacting. He went out and bought the most expensive piece of photographic equipment he had ever owned, a Chronos exposure meter, \$24.95.

Next, Chris read "Studio Lighting For \$12.05" in the January issue of MODERN and purchased five R-40, 300 watt floods. The sum wattage just stayed within the fuse limitation—provided Chris pulled the refrigerator plug from the wall socket.

He arranged two floods against the blue background and three on his wife. He took a meter reading and exposed at f/11 for 1/2 sec. through an Enteco UV-15 correction filter. Chris found he could time a half second fairly accurately by exposing for the same length of

time it took him to say "and." Few would guess that the finished photograph (see page 53) was shot with a box camera.

Despite the innovations of a speeded-up shutter, color with a box camera and close-ups, Chris' advice to fellow box camera owners is to stick with it until you know all its capabilities. He also advises the use of a tripod if the box camera has a tripod socket. This will very often eliminate typical box camera blurriness.

Chris explains that there are a number of reasons why he still prefers to work with a box camera—he has few exposure problems in black and white, and no focussing problems. He can concentrate on his subject material. Besides, he hasn't found anything yet that he can't do with a box camera.

Things to come

Chris is now adapting his box camera with contact points for electronic flash and strobe. He is also experimenting with macrophotography.

"I don't know if I will ever exhaust the possibilities of the box camera," declares Chris. "It seems to be able to do anything but mix a milkshake." —THE END

STROBE FOR AMATEURS

(Continued from page 37)

for one strobe lamp, others for two and some for multiple lamps. The least expensive units usually have but one lamp. The Dormitzer Synctron Candid, for example, is a portable unit which was used to shoot in color the cat and the little girl on pages 35 and 36. It is among the least expensive two-lamp units, priced at a little over \$150 for unit, battery, two lamps and recharger.

Two-lamp units

We'd advise getting a two-lamp unit if you can afford it. One lamp will limit the lighting you will have at your disposal. However, if your finances can't stand a two-lamp unit, buy a single unit. You can probably add another unit later.

Once you decide on whether you want a portable unit or will be satisfied with being tied down to an electrical outlet, and have also decided how many lamps you will need, you should become familiar with a few strobe terms such as watt-seconds, exposure guide numbers and flash duration.

Watt-seconds is the designation of capacity and output rating that most manufacturers use as a standard. From your school physics, you may remember the electrical term, joule, which is exactly the same thing. The joules or watt-seconds of a unit are found by multiplying the capacity in micro-farads by the kilovolts squared and then dividing the

whole mess by two. If that's too complicated just remember, the higher the watt-second output of your unit, the more light you will get. The Dormitzer unit is rated at 75 watt-seconds which roughly corresponds to the output of a No. 5 midget bulb synchronized at 1/400 sec.

Flash duration is simply the term given to the time of the lamp flash. In early units, the duration was usually as small as 1/10,000 of a second, and countless pictures of eggs being smashed with hammers with all action frozen in dead sharp focus were seen. The present day small units have sacrificed such speeds to cut down the size and weight.

Most amateur units have an actual flash duration of about 1/1000 to 1/5000 of a second, which is plenty fast enough to stop most action.

The exposure guide numbers in strobe flash are all supplied by the manufacturers of the units. They work the same way as the guide numbers used with flashlamps. To find the lens opening for a shot using a certain type film, you merely divide the exposure guide number by the number of feet the unit is from the subject. Unfortunately, some manufacturers of strobe units have engaged in a bit of prevarication regarding these guide numbers and many of them are far too high—each company attempting to push its guide number above the competitor's.

So don't pay too much attention if two units of similar watt-second capacity and
(Continued on page 88)

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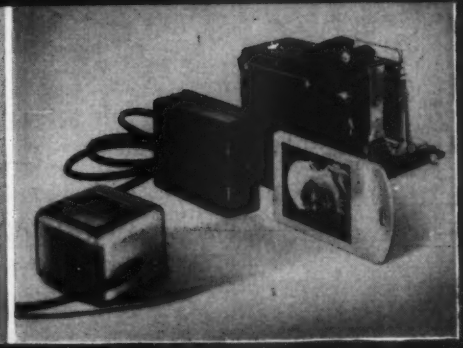
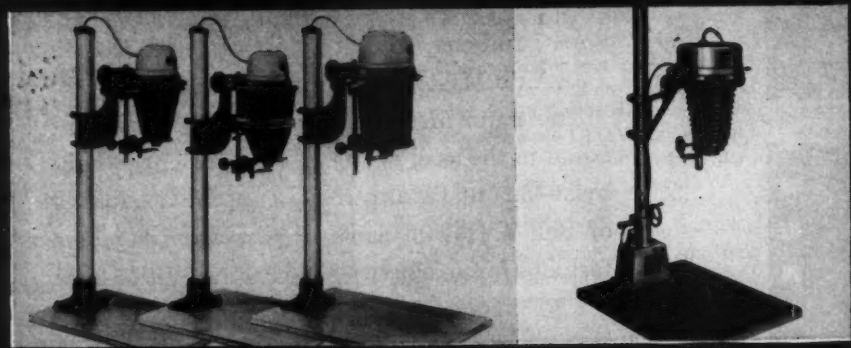
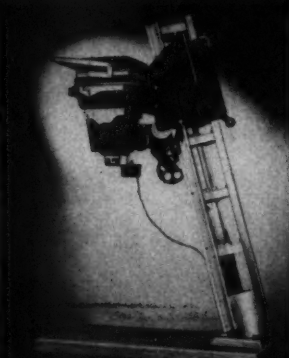
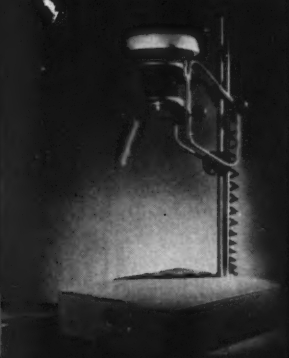
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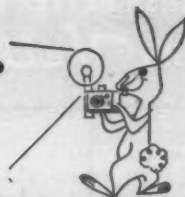
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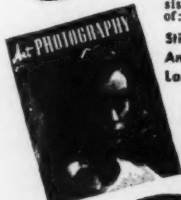
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STROBE FOR AMATEURS

(Continued from page 84)

flash duration, with the same tube and reflector, have decidedly different sets of guide numbers.

How else do units differ?

Construction and design are extremely important to the efficiency of a strobe unit. Since it is a piece of electronic equipment, like a radio, it may be built well or sloppily and the components may be expensive or may be the cheapest available. Ask the photo store clerk if he will open the unit so you may look inside. If you know a radio mechanic, bring him along. He can tell you if the wiring has been done efficiently and if good components have been used.

Look for the safety features built into each unit. Even the smallest portable units are capable of giving you an extremely bad (perhaps dangerous) electric shock if you go playing around with their innards. Safety features you should watch for are immediate shut-off of current and discharge of stored-up charge when any of the connecting high voltage wires are pulled from their sockets; an immediate discharge when the unit is turned off. These features are extremely important. Some of the less expensive units with fewer safety features should be handled gingerly.

Strobe flash tubes

You'll also notice that manufacturers incorporate different types of strobe flash tubes in their units. Some are helical coil sealed beam, some U-shaped and others helical coils in plain glass envelopes.

The results from the different tube types will vary. The amount of concentrated light produced by the flash tubes is also dependent upon the design of the reflector, as in standard flashlamp synchronizers. Each manufacturer makes certain claims for his strobe tube and reflector and believes it to be about the best. The FT-110 tube and reflector used in the Dormitzer and many other small units were adopted only after considerable research by the manufacturer, the General Electric Co.

GE, incidentally, does not manufacture the reflectors—only the tubes—but the company did intensive research on reflector design, the results of which were furnished to all strobe manufacturers using the FT-110. With few deviations the manufacturers have designed their reflectors from the GE information.

Although GE claims 30 percent higher efficiency with the prescribed separate reflector, there are excellent reasons why the sealed beam tube is still retained by many manufacturers.

The sealed beam lamp is always in the correct reflector position. It can't slip out of the prime focal point. Thus it always works with maximum efficiency. Also the built-in reflector does not tar-

nish and is impervious to fingermarks.

Once a unit is bought and put into operation as per the manufacturer's instructions, it's advisable to follow the guide numbers as laid down by the manufacturers for testing the unit. Try it first with one lamp and Plus X or Ansco Supreme film.

Why not use a fast film and get all the speed you can? For a very good reason. We've found that even with cutting the manufacturer's guide numbers, thin, flat negatives still result. The best strobe negatives are obtained from film that has been developed longer than the instructions call for. However, the longer you develop, the more grain you bring out. We've found that with strobe, a medium fast but fine grained film, such as Plus X or Supreme, can give you the same guide number as an extremely fast film, and with less grain. Use a good fine-grain developer such as Kodak Microdol, Ansco Finex, FR X-33 or Harvey 777.

Getting the right contrast

Your first roll will in all probability be printable if you follow all the instructions but you may find the negatives soft and lacking in contrast.

Next try cutting the guide number down by about fifteen percent and increase your developing time by about thirty percent. You will get a more contrasty negative, and probably with no appreciable increase in grain. Continue to juggle your exposure indexes and developing time until you reach a point where you are getting the type of negative you like to work with—plenty of contrast, but not too much grain.

In what way will your final negative be different from negatives taken with regular flashlamps? I think you will find that there is much less tendency for the highlights to block up and become chalky.

This improvement is caused by the extremely short duration and intensity of the strobe flash. With a No. 5 flashlamp, the duration of the entire flash is many times longer than with strobe. Although the law of reciprocity states that up to a certain point a high intensity light with a short duration will produce the same exposure as a low intensity light with a longer duration, it does not follow in strobe. Without going into higher mathematics, we can say this:

With strobe, part of the intense energy is dissipated in getting over the "threshold" of the film and into the emulsion. The highlights therefore do not get sufficiently exposed to block up. The weakness in shadow detail can be made up by overdeveloping, without blocking up the highlights.

Two-lamp units

Next we come to a subject which is in a terrific state of confusion. It involves only units employing more than one strobe tube. Specifically, if the second lamp is added to the unit, what happens

to the total light output of the unit?

This question can only be answered by breaking down the types of units into two classifications. The unit employing only one battery and condenser system, the double unit which is just that, two complete units.

The simple unit, such as the Dormitzer, at all times delivers maximum output. With one lamp, it delivers maximum, with two, maximum is still delivered, but each lamp by itself delivers only half the amount of light the single lamp did previously. Thus the total output remains the same.

With the double unit, maximum output is only achieved when two lamps are on the line. At other times, only half the output of the total unit is being realized.

The single units are lighter in weight than the double ones and always give you maximum efficiency per pound of unit no matter how many lamps may be in use.

With two lamps on the line what happens to the duration? With a single unit, it is halved; with a double unit, it remains the same. But in any case it does not affect your exposure.

If you think this is confusing, you should take a look at the calculations that go into figuring the whole thing out.

Not easy to shoot color

Color with a small strobe unit is a very touchy subject. Since the emulsion speed of color is so low, and overdeveloping is not easy to accomplish, a pretty wide lens aperture is necessary with a corresponding loss of depth of field.

The miniature camera with an $f/3.5$ lens or, better still, an $f/2$, is ideal for taking color with strobe. The short focal length of even a fast lens will give a good depth of field.

With the Dormitzer unit, we found that by using daylight Kodachrome with an exposure guide number of twelve, we obtained excellent results. No correction filters of any type were used. The results differed from those achieved with regular flashlamps in that the highlights showed more detail. This parallels black and white experience.

With color films other than daylight Kodachrome, it is advisable to consult the manufacturers as to the necessity of correction filters. (See "Photo Data," MODERN, Feb. '51.)

As for actually taking black and white or color pictures with strobe, you won't find the technique different than flash. Children and animals, however, you will find become much more amenable subjects when strobe is used. The short duration does not produce the same blinding qualities as the flashbulb.

If you purchase a one-lamp unit, you'll find yourself limited—but don't feel you must always shoot with the unit right on the camera. Get some large white cardboards or sheets of crinkled tinfoil and use them as reflectors with the strobe off to the side of the camera.

A few tips

Before closing let me leave you with a few small tips:

Keep the fluid in the battery of your unit at the correct level at all times, adding only distilled water, no matter the claims made for the stuff coming out of the tap. Play it safe and your battery will last for about 200 recharges—with 100 flashes to a charge that's 20,000 shots. That should hold you for a while.

Don't let your battery run down if you are not using the unit. Batteries deteriorate if they are not kept charged. Don't worry too much about overcharging the battery. It seldom happens.

If something goes wrong with your unit, don't be a pioneer electronic genius

—take it right to a repair shop. No, only may you completely wreck your unit if you decide to see what's wrong, but you're liable to get the shock of your life.

Keep your unit away from children. Make sure it is out of their reach. Safety features or no, a child can find more ways of getting around the most fool-proof apparatus and getting a shock. Besides, strobe units don't bounce well if knocked off tables.

What's wrong with strobe? Not much, and don't pay too much attention to calamity howlers who run it down. Your pictures, both black and white and color, and your savings on flashbulbs are your proof of what strobe can do for you and your photography.

—THE END



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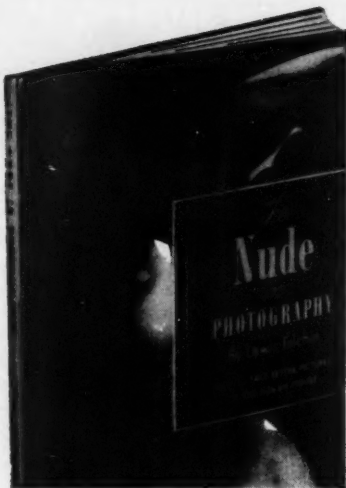
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MOUNT YOUR PRINTS

(Continued from page 62)

Let's start with the dry mounting method. For this you'll need a box of Kodak or Fotoflat dry mounting tissue, mounting boards (16 x 20 or 11 x 14 size), a cutting board (in lieu of a cutting board, a steel straightedge and a razor blade will suffice), a mounting press or household or tacking iron, a 12-inch rule, and a good print.

Dry mounting tissue can be bought in 8 x 10, 11 x 14 and 16 x 20 sizes in boxes of 144 and envelopes of 12 sheets. Prices for mounting presses start at about \$50 for the 8 x 10 size and go as high as \$200 for the 16 x 20. If you're not going to do a great amount of mounting, a household iron will do instead. With this material and equipment you are now ready to go to work.

First, place the print on the mount and, with the ruler, check the distance from the print edge to the edges of the mount, making sure the print is straight (Fig. 1). Mark the print site by penciling small "L" marks at the corners.

Place a piece of dry mounting tissue on the back of the print and "tack" in one or two places with a tacking iron (Fig. 2) or household iron (Fig. 3). The tissues should be the same size as the print and the edges should be even. When tacking the tissue on the back of the print, be careful not to crease the tissue or the crease will show through the face of the print when it is mounted. (The correct heat for mounting prints with a household iron can be maintained by setting the control on "Rayon.") Trim the picture and the tissue to eliminate the white border usually found on the average print. This operation is done on the cutting board if one is available, or with the steel straightedge and razor blade, or some other sharp cutter.

Placing the print

Place the trimmed print, with the tissue tacked to the back, on the mounting board in the desired position. Measure the distance from each side, both at the top and at the bottom, to be sure the print is correctly placed. After the print is positioned, lift one corner of the print and tack the tissue to the mounting board (Figs. 4 and 5). Do this to the three remaining corners to prevent the print from shifting out of place. The print and mount are now ready to be fastened together permanently. If a mounting press is used (Fig. 6), it should be operated at a temperature of 175° to 225° F. and the print should remain in the press for about 1½ minutes or until securely fastened to the mount. The print is placed in the press face up and an extra mounting board is put on top to prevent the print from scorching. An additional mounting board

is placed beneath the main mount to prevent the heat from being carried away too quickly.

If a household iron is used, the mounting is done by running the iron over the print, pressing down firmly until the print is securely fastened to the mount (Fig. 7). To prevent scorching the print, a piece of white paper is placed over the face of it before the iron is applied. The job is now done and the print is ready to show to your friends, be entered in a print competition or be placed in your studio, living room or den.

If for any reason you wish to remove the print from the mount, it can be done simply by heating slightly with a mounting press or household iron and carefully pulling it from the mounting board. On the other hand, if the print at any time starts to come loose from the mount, it can be fastened again by placing it in the mounting press for a short time or by ironing it as described above.

Rubber cement mounting

Perhaps you would rather use rubber cement. If so, you'll need: a jar of rubber cement with a brush, mounting boards, a cutting board or a straightedge and a razor blade, waxed paper of the regular kitchen variety, a 12-inch rule and your photograph.

The print is first trimmed free of its white edge (Fig. 8). This is your last chance for cropping, so be sure the print is now cropped the way you want it. Place the print upon the mount in the position and mark with small "L" marks as in dry mounting.

Now apply rubber cement evenly but not too thickly on the back of the print (Fig. 9) and also on that part of the mount where the print will rest (Fig. 10). Let both dry completely. *This is important.*

The next step is to place two pieces of waxed paper, overlapping each other, over the dry rubber cement on the mount. Place the print on the waxed paper, shifting until the print is in its proper position. Lift one end of the print, holding the other end firmly on the board and remove one of the pieces of waxed paper (Fig. 11). Press the two cemented surfaces securely together, lift the other end of the print, and remove the remaining piece of waxed paper (Fig. 12). Press the print down in place, making sure it is adhering securely over the entire area of the print (Fig. 13). Remove the excess rubber cement by rubbing with your fingers and erase the "L" marks at the corners (Fig. 14). The job is now done and the picture is ready to hang (Fig. 15).

How to protect a print

After the prints are mounted, added permanence and protection can be given them by applying a coating of wax, lacquer, or plastic spray. Simoniz does an

excellent job. The trick with this is to use little wax and plenty of polishing. The wax in paste form is applied in a smooth, thin, even coating and allowed to dry for a minute or two. Then with a piece of flannel or cheesecloth the print is polished until a good luster is obtained. Care must be exercised to prevent the wax from getting on the mounting board. The best way is to use three cloths; one to put the wax on, one to spread it around evenly, and one to polish it. Prints can also be sprayed with lacquer or liquid plastic, both of which are obtainable in the large photographic stores. Some of these materials, such as Krylon, come in compressed air "bombs" and to spray the liquid on, you simply press a button and out it comes.

Hanging the print

Now that your prints are mounted your next job is to get them up on the wall and the methods of hanging them vary as much as the methods of mounting them. The simplest and easiest way is to use thumbtacks. The thumbtacks with glass heads available at most artist supply stores make a very well finished



Mounting with glass tacks.

job. Available at camera stores are handy and convenient little gadgets known as "Braquettes." They come in steel and plastic and offer a neat and artistic means of hanging.

A permanent display rack can be made in your studio or den by getting picture molding with recessed slots big enough to take the prints, and nailing the molding to the wall. Two pieces the length of the wall are needed and are nailed to the wall parallel to each other. They should be placed about 19½ inches from each other or far enough apart so that the mounts can be "bowed" and slipped into the recess of the molding. With this sort of thing your prints can be changed.

You have been shown here the basic technique and some of its variations. However, the only limits to the effects that can be achieved are your initiative and your imagination. And remember, if you have prints that you are proud of, mounting makes the picture. —THE END



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IS PICTORIALISM KILLING PHOTOGRAPHY?

(Continued from page 41)

composition was the general reaction of those who should have welcomed the conclusions. It was not surprising that salon pictorialists revolted and denied the validity or applicability of the findings. But even the non-reactionists in photographic circles who, as a group, have thrown bricks at the pictorialists objected. Instead of recognizing that the results supported their views, they revoiced their contention that no amount of scientific testing could "explain" the meaning of art.

What do the eye-movement tests claim to prove?

Actually, the various reports on eye-movement studies make no pretense of proving anything beyond the fact that the rules of composition cannot be verified on the basis of the effect they have on any observer's eye-movements. Just because this is a negative conclusion, however, it does not invalidate the truth or purpose of the studies. No effort was made to evaluate art on a scientific basis. Nor were the so-called rules of composition under test. The possibility that the application of rules led to artistic production was even admitted. What was under attack was merely the accepted explanation of *why* it was necessary to

embody certain compositional principles in a picture for it to be good. There is today no doubt that if the rules of composition are ever to be confirmed on an objective basis, they need a new supporting theory, and one that can be put to test. In short, the existing rules of composition are without a crutch to lean on.

Are there other indictments against the rules?

There are other grounds for looking upon the rules of composition with suspicion. First, there are hundreds of pictures of recognized artistic value that show no evidences of structure to comply with the rules. Second, there are no existing records which substantiate the oft-repeated claims that the old masters followed definite rules of composition. On the contrary, some of the earliest writings of artists on art criticism are abundant with ridicule against those who attempted to analyze the structure of their works.

Along more objective lines, there is also a great mass of data in the literature of experimental psychology which fail to support the beliefs of the rule cult. For example, it has been shown that both art-trained and untrained people can

give their evaluations of pictures after a few glances of only 1/25 second each. And in these tests opinions changed very little after prolonged examination of the pictures. But as one might expect, those in the art-trained group altered their opinions more than those in the untrained group. Does this mean that art-trained students, for reasons related to the fact that art study attracted them, are more able than untrained observers to discern good art from bad? Or could it mean that training in art itself established patterns of thinking which, perhaps artificially, caused their contemplative opinions to differ from their initial opinions?

Are amateur photographers being misguided?

There is every indication that the guidance amateur photographers receive in art principles is not what it should be. In twenty years of activity in camera clubs I have heard hundreds of lectures on composition—all of them nearly alike. I have heard judges repeatedly apply the substance of these talks in analyzing the merits or demerits of photographic prints. And I have seen dozens of prints that held strong audience appeal thrown out by these judges because of some infraction of an *assumed* principle of composition. Certainly my experiences are not unique. A few people, like Jacob Deschin, author of "Say It With Your



How do you prefer your sailboats? Carleton Mitchell went after battered realism in this picture (left) which appears in his book "Yachtsman's Camera." A picture of this type would probably be rejected at a salon judging because "it ain't pictorial." David J. Stanley's salon print (right) emphasizes the abandoned quietness of a foggy day in a harbor. Realists have little sympathy for this poetic approach to photography. Their reaction to the orderly perfection of this picture's composition: "It ain't natural. Human eyes don't see boats that way!" Both viewpoints have some validity; could there be a successful compromise?

Camera," have had the courage to speak out. They believe—and I think rightly—that the mass adherence to a set of unfounded rules of composition prevents, or at least retards, the development of photography as a free and flexible method of expression.

What can pictorialists do about the decadence of their work?

Any teacher worthy of the name recognizes, of course, the tremendous importance of establishing principles firmly in the minds of students before considering the more complex aspects of a subject. But to teach "principles" that have no real basis in fact is a great injustice to a student. Yet, singly and collectively, salon exhibitors have been taught by word and example such inflexible "principles" of composition that they have been stifled in producing creative and imaginative pictures on their own. This, perhaps more than anything else, accounts for the deadly monotony of present-day exhibitions. Excessive compromise, misplacement of emphasis, and a general decadence in art evaluation have created an almost total absence of artistic insight among "salon" photographers. Pictorialists generally have become so mechanically alike in their thinking (subject matter, 2 points; composition, 1 point; print quality, 4 points; etc.) that it is oftentimes questionable if artistic values in a photograph are even recognized. While these may be considered rash and unwarranted statements, it must be obvious to any qualified, straight-thinking person that most of the noteworthy achievements in photography today are found outside of pictorial salons. This will continue to be true until such a time as pictorialists produce pictures that stand on qualities entirely incapable of verbal analysis: pictures that cause one first to say "this I like," or "I don't know why, but this picture has a rare quality that could come only from the mind of a real artist." Not until emphasis is channeled in this direction can pictorialists begin to produce real pictures instead of exercises devoted to the worship of dogmatic rules and mechanical technique.—THE END



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ARNOLD NEWMAN

(Continued from page 58)

his mind stays on that same track.

The problem of light is a poser to most photographers in search of a good portrait. Raise this one higher and de-emphasize the nose; place this one in back and get a halo effect. It's all according to what you're after. Well, Newman is after a man's life, a biography. And to him, lighting which calls attention to itself because of its artificiality or dramatic quality detracts from the portrait.

Newman says that he tries for a recreation of what is before his eyes. He wants the reader to share a common experience with him. The experience of meeting, conversing with, observing another human being.

Therefore, the lighting in the photograph must duplicate the lighting before your eyes. To this end, he uses natural light whenever possible. If it is not possible, he uses ordinary floods in simple reflectors on Saltzman clamp-ons. These floods are bounced off the ceiling and give a scattered, natural light throughout the room.

Is the negative frame sacred?

You might think by looking at Newman's work—its clarity and obvious precision—that he was of the purist school of photography. This isn't true. We asked him if his pictures were always framed within the negative. And his answer was an emphatic no. He hastened to add that the majority of his finished prints were like his mental visualization of the photograph long before the sitting began. But, it is also true that at times there is much more on the negative than appears in the finished job.

Reasons:

1. To bring the camera closer might change a perspective he had worked some time to get.

2. A long focal length lens might not give him enough depth. A short focal length lens might result in distortion. Therefore, he uses a medium focal length lens and crops for the proper final composition.

Newman says that he has merely "refined the original conception," improved upon what he has done. And he points out that both writers and painters refine, redo. He believes that it is good exercise, good discipline to train yourself to see the final picture immediately. But that this discipline need not become a tyranny.

He goes even further than cropping the negative. He believes that photographs need not be rectangles. They can be of any functional shape. And they can be used in books and magazines, on museum walls, six inches out from the wall, blown up to eight-foot enlarge-

ments. Whatever you please—as long as they are photographs to begin with—and not imitations of paintings.

Darkroom technique is simple

Newman believes firmly that the photographic process begins and ends with the photographer. He visualizes the picture, he takes, he prints it. And he prints it in proof form. Then he crops it. Then he begins to print. It may take him an hour (this doesn't happen often), a day, sometimes years before he finds a print which completely satisfies him.

He has simplified his darkroom technique as much as possible. He develops his negatives (shot on Super Panchro Press, Type B, for top speed) in D 76—using a time and temperature method. He tends to increase exposure times and lessen development.

Printing is done on Varigam. Newman says that for years he wanted one paper. It saves wastage and time. As soon as Varigam was announced he began to use it. And he's used it ever since. (For the story of Varigam, see March 1951 issue of MODERN.)

For 95% of this work, Newman uses a 4 x 5 Meridian view camera. He says he likes it because he doesn't know of another camera with so many swings and such compactness. His second camera is a 5 x 7 Agfa view equipped with a 4 x 5 back, which is used mostly for studio work.

His lenses are four: (1) An f/8, 3½-inch Goerz Dagor wide-angle, which is used for interiors, architecture, special effects in trying for abstract forms; (2) An f/6.8, 6-inch Goerz Dagor for general portraiture and three-quarter-length portraiture; (3) An f/6.8, 8½-inch Ektar for close-up portraiture; (4) An f/6.8, 12-cm Angulon. Each of these tools is used in terms of a specific assignment. There are no rules. But Newman does say that speed in a lens is unimportant to him, since he never shoots wide-open. He always stops down as far as practical—many times to f/32.

Newman's a non-journalist

In spite of the fact that much of Newman's work has appeared in *Life*, he does not look upon himself as a journalist at all. He strives to make each photograph complete within itself. He does not want his pictures to depend upon others to tell the story. Each must be complete like a movement in a symphony, which can go with another movement or be complete within itself.

"This is not reportage. Reportage is for a specific use. My photography is not." If you take a statue away from its original setting (which may be a place of worship, a Greek temple) and you place it in a museum, it still retains its integral quality as a creative work. That is the goal which Newman wants to reach

in his photographs. It is the photograph for its own sake, not for the specific assignment, that he is after.

He feels that the photo-journalist should first fulfill his assignment, but this is only the first step. He should then search for the photographs that are complete within themselves. Newman explains he has fortunately been able to do such creative work while on assignments.

Working with people

Newman says he learned to work with people because he was brought up in the hotel business. And he met and had to make comfortable so many kinds of people that he quickly got the basic training every portrait photographer needs. But the rest of his background was also good training.

When Newman was in high school, he wanted to study art. He showed an aptitude for painting—and when he was graduated from high school, he received four scholarships in painting. He took the one at Miami University in Florida, because that was near his home and he didn't have enough money to go away. Soon he found he didn't have enough money to stay home. So he had to find a job.

A family friend wrote, offering him a job as an apprentice in a portrait studio. The studio was in Lit Brothers' department store in Philadelphia, and was one of a chain. The pay was \$16 a week, and the promise in the letter was that if Arnold applied himself, he might one day make a good living out of photography!

The promising art student took the job in order to be able to paint. Soon he was mixing chemicals, taking portraits according to set rules (49c a picture), printing and developing. And soon, too, he gave up painting "because you can do only one thing well at a time and I had become excited by photography." He borrowed a 2 1/4 x 3 1/4 Contessa Nettel camera (a folding camera with a ground glass back) and went out to try for some of the mental images that he had visualized. The first day he came across the mother and child on page 56.

During the day, Newman frustrated himself by taking commercial portraits in the studio. This he did almost automatically while his brain burned with the possibilities of this exciting new medium. At lunch time he took pictures. And at night, he went back to the department store and developed and printed them.

He had many friends in Philadelphia who had just been graduated from the School of Industrial Arts. These included such well-known names as Ben Rose, Morris Berd, Milton Weiner, Sol Mednick, and Ben Somoroff who, with

(Continued on next page)



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ARNOLD NEWMAN

(Continued from preceding page)

Arnold and others, became known as "the Philadelphia group" because of their impact on photography. Newman feels that he owes a great debt to these friends because their discussions and criticisms brought him down to earth many times when he was flying off on tangents of his own. He points out the need for photographers to take their work to others, to listen, to be able "to take it," to use criticism as a tool in one's work. And he adds that no one is ever too big, too important for this treatment. He confesses that he hit a dead spot in his work a few years ago. He didn't know why. But his friends told him, with their gloves off. And the chastened Newman went to work again and got out of the dead spot.

With Newman on assignment

Photographers are like everyone else. They'll tell you they do something one way, yet when you have a chance to watch them, you'll find they do something quite different. For example, I have known Arnold Newman for some years. I've talked to him and others about his work, and I even watched him photographing friends of his. During the time we were working on this story, I went with him when he photographed Raoul Dufy, the French artist who is visiting the United States to find a cure for the arthritis which has almost crippled him.

The photographer worked under terrific handicaps: He and Dufy did not speak the same language. Dufy was in great pain from his illness. The setting was a one-room apartment containing photographer, subject, and four other people. Lunch was being cooked in a

small kitchen. The telephone rang every five minutes. Dufy could not be moved at will. The time was limited to one hour.

Newman is a nervous man. He is seemingly unsure of himself at times. When we had started to leave his studio for the Dufy appointment, he went back many times to check information, to give his darkroom man instructions, to make sure of the address. Yet—in back of a camera, Newman dominates the room. The subject functions for him, the furniture functions as part of the composition, the subject's friends are there as sounding boards. No remark is wasted. No movement is unimportant. He is harsh and sometimes cruel with his subject. I was sure as Newman worked that among the best of the Dufy portraits would be one of an old man glaring—as if to say—"Why am I letting this young upstart subject me and my arthritic hands to this?" Yet he did. He did not question directions. He followed them and so did everyone else. Newman did not try to dictate scenes and emotions. The result? A portrait of Dufy, not of Newman.

Newman thinks it is a good idea to stop and look at what you are doing. He says he's taken a lot of pictures he'd just as soon forget about. That he didn't realize how really bad some of his things were (creatively speaking) till he put them up against the photographs which have always satisfied him. And now that he's found some things which do satisfy him, he's not going to repeat them over and over again till they bore the public and kill his creative energies. Instead, he wants to experiment. To try and see in new ways. Maybe multiple exposure to catch multiple facets of human personality. Maybe new shapes to break away from the limitations of the rectangle. Maybe . . . —THE END



Newman's photograph of French artist Raoul Dufy discussed in text above.

COLD LIGHT

(Continued from page 47)

getting from their condenser equipment. This reduction of contrast is one of the characteristics of cold light enlargers. The reduction in contrast is small, however, and does not amount to a full paper grade. In other words a certain negative enlarged in a condenser enlarger on No. 2 contrast paper will still have less contrast than the same negative enlarged in a cold light enlarger on a No. 3 contrast paper.

How much less contrast?

The reduction in contrast is usually given as about halfway to the next lower paper grade. This change of contrast is usually not pronounced in the middle tones but shows up most strongly in the shadow and highlight areas. With the cold light enlarger, shadows seem more transparent and contain more detail than with a condenser enlarger. The highlight region of the enlargements also gains more than the middle tones. More detail is visible in the lighter tones on cold light enlargements.

Steady users of cold light enlargers have learned to compensate in advance for the contrast reduction by increasing negative development time. Exactly how much increased development is necessary can't be specified here. It depends on the type of film, developer, paper and other factors. However, it may run anywhere between 15 and 50 percent. A little experimenting will give you the right answer. Don't be too alarmed about the prospect of excessive graininess resulting from this increased development. Cold light enlargers are great grain suppressors. The resulting enlargements have the required contrast range, with the added advantage of more detail in highlights and shadows and a smoother, more pleasing appearance.



Do condenser enlargers make sharper prints than cold light enlargers? Here are 10X enlargements of a section of the same resolution chart negative, made in both types of enlargers. Can you tell which type made which print?

Can prints be brilliant?

Brilliance is really a psycho-physical term, something that cannot be measured directly, but it refers to a quality which makes a print sparkle. For example, carefully make a photograph of a building on a sunshiny day and another on a cloudy day using same film, same lens opening, just changing exposure time to suit. The prints from these negatives will look vastly different; one will sparkle and one will look dull. It was just the difference of lighting and contrast. No matter what kind of enlarger you use, the picture taken on the dull day will never have the sparkle of the one taken on the clear day. Brilliance is a quality of the original lighting.

Contrast is something else again. It is true that cold light enlargers produce prints that are slightly less contrasty than those made with condenser enlargers, but this does not mean lack of brilliance. Contrast may be controlled with various paper grades, but brilliance is a quality in the original negative, not the product of the enlarger.

How's the sharpness?

Two loosely used statements have caused no end of confusion in the proper evaluation of cold light enlargers. The first is, "Prints made with cold light enlargers are softer than condenser-made prints." Yes, the prints are slightly softer in contrast. This does not refer to sharpness of detail. Sharpness is dependent upon three factors: (1) how sharp the negative is; (2) how good the projection lens is; (3) how carefully the enlarger is focused. With a sharp negative, a good projection (enlarger) lens and careful focusing, cold light enlargers will show as much fine detail as condenser enlargers.

The second statement used loosely is: "The cold light enlargers are diffusion

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COLD LIGHT

(Continued from page 97)

type printers." Yes, cold light enlargers use a diffused *light source* but the image they project is just as *sharp* and *clear* as condenser enlargers. The diffusion does *not* refer to the projected image, but only to the light which illuminates the negative.

How's the speed?

The speed of an enlarger tells how quickly it will make a print from a standard negative enlarged to a specified size. The fastest cold light enlargers are about as fast as the condenser type on 4 x 5 negatives. For smaller size negatives, the condenser type is faster. For 35mm negatives, the condenser type is roughly 5 times faster than the cold light enlargers. BUT, don't jump to conclusions.

Where would you prefer to spend your time—five seconds in making a print under a condenser enlarger and thirty minutes retouching dust spots and blemishes from your enlargement? Or twenty-five seconds exposing your print with a cold light enlarger and ten minutes spotting?

Don't let comparative enlarger speeds fool you in this respect. It's the quality of the final results that counts, not the few seconds more or less used during projection. And if you like a bright image for focusing, use one of the easel focusing devices with a built-in mirror which reflects the image up to a ground glass. You should use one of these gadgets anyway, no matter what kind of enlarger you work with, to get sharpest

texture rendering in your enlargements.

When it comes to showing texture, the cold light enlargers really shine. Texture is made up of fine detail that is limited usually by the grain of the silver image. Condenser enlargers are notorious for emphasizing grain, and large blow-ups from regularly processed negatives are apt to show an unpleasant salt-and-pepper appearance.

Cold light enlargers show much less grain. The result is that a smooth surface like the skin texture of a baby appears in all its smoothness; you can almost feel its velvety surface. How valuable such a quality can be to the portrait photographer!

The smaller the negative is, the more important does it become to keep down the appearance of grain. Even though somewhat slower than a condenser enlarger for small negatives, the cold light enlarger should be preferred to produce enlargements with minimum graininess.

No matter how carefully negatives are handled, they will become abraded by handling or rubbing up against each other, or even by friction while being transported from roll to roll in the camera. These abrasion marks show up distressingly on large blow-ups, particularly from small negatives. The cold light enlarger will reduce the visibility of these markings considerably as compared to condenser-made prints.

Dust somehow accumulates on negatives and each speck appears as a white dot on the print. With a glass sandwich negative holder, dust is even more pronounced because of the many surfaces

which collect it; two glass plates have four surfaces plus the two surfaces of the negative. What a collection of dust can accumulate! And yet this is the only way to insure that the negative is held absolutely flat.

The strongly directional light of a condenser enlarger makes all these specks show up. But in a cold light enlarger, the negative is flooded with light from virtually every direction. Many specks which would show up in a condenser enlarger become almost invisible under cold light, which softens the outlines of specks on the negative, as well as scratches and retouching marks.

They're okay with Varigam

Cold light enlargers work well with Varigam variable contrast enlarging paper. The Varigam filters are used in the same way as with any other type of enlarger; the results are just as good, with one exception. The 6400°K blue tubes may not work well with Varigam; best results are obtained with the 3500°K tube and the 4500°K tube is also okay.

Color photography and cold light

Enlargers are used in color photography for several different purposes:

1. Making direct color prints from color transparencies on to Ansco Printon or similar materials.
2. Making separation negatives from color transparencies.
3. Making separation matrices from Ektacolor negatives.
4. Making enlarged prints from color separation negatives.



Unskillful retouching, dust and other negative defects show vividly in this print made in condenser enlarger.



Same negative in cold light enlarger produces print with slightly less contrast; most defects have become invisible.

Anso Printon requires a rather heavy exposure in the red end of the spectrum so the blue or blue-white cold light sources do not emit quite enough red for best results. The white 3500°K cold light lamps are suitable for this work.

Separation negatives may be made from color transparencies or Ektacolor negatives with either the white (3500°K) or the blue-white (4500°K) lamps with satisfactory results. Filter factors must, of course, be determined accurately for the lamp in use.

Enlargements for carbonyl and dye-transfer prints may be made with any of the cold light heads. The full detail produced by the cold light is a great advantage in color printing. The blue (6400°K) should be particularly valuable for enlarging separation negatives because of its low contrast.

Other uses of cold light

Cold light heads as used on enlargers have other uses than merely illuminating the negative for enlarging.

Detached from the enlarger, cold light heads, especially those with the white or blue-white color, make excellent retouching stands. A plate of clear glass on the lamp will support the negative while it is being retouched, opaqued or masked. The coolness of the lamp keeps the negative at a comfortable temperature.

The detached cold light head also makes an excellent negative or transparency illuminator for copying purposes. Either the enlarger may be equipped with a camera back or a regular camera may be used to make the copy.

For photographing small objects such as jewelry, insects, or small machine parts, the cold light head makes a perfect stage to support these specimens. When turned on, it effectively eliminates all shadows and produces a white background. The specimen is supported on a plate of glass over the cold light head.

Watch that warm-up!

At this point you might well have the attitude, "All these features are fine, but don't cold light enlargers have some drawbacks?" Yes, there is one. They have a warm-up period which must be taken into consideration. If you don't know about this, it can really annoy you and interfere with your results. Now that we're telling you about it, it becomes a minor matter.

Here's how the warm-up can throw you for a loss, if you're unaware of it. Suppose you've warmed up your light while focusing, and then made your first exposure of let's say 10 seconds. While you're developing the print the light cools off. In five minutes you decide to make another 10-second exposure of the

same negative. You develop the print and find you have to keep it in the developer a bit longer in order to get the same kind of print as before.

While you're doing this the light cools off some more. Five minutes later you make another 10-second exposure. The light's cooled off so much that its effect will only be the equivalent of a 5-second exposure with a warmed-up light.

Remember, if the light is turned off 15 minutes, its output drops to about one-half its warmed-up value. It only takes about one minute to get fully warm, so if you turn on the enlarger while you're getting ready with a new negative and inserting it, the light will recover full intensity.

Getting around the warm-up

If this warm-up thing bothers you, the simplest remedy is keep the cold light head turned on. Nearly all enlargers have a red filter mounted under the lens. Use it like a shutter—keep it in the cone of light while you're placing the enlarging paper, swing it out of the way for the required exposure interval, then back under the lens to block the light. As a matter of fact, some professional enlargers use a magnetically operated shutter for this purpose.

That about winds up this story on cold light enlargers. Perhaps you have some questions. Who makes them? What sizes do they come in? How much do they cost? Can I convert my present enlarger to cold light? Answers to these questions are given in the Photo Data section of this magazine. Please turn now to page 86 for a lot of helpful, practical information.—THE END

EDITOR'S NOTE: Charles H. Coles has had long and varied experience in the optical and electrical fields. For 10 years he was in charge of the Department of Photography of the American Museum of Natural History in New York City, during which time he went on two expeditions. As an Air Corps captain during the war, he was Project Chief, of the Photographic Engineering Laboratory, Wright Field. After the war he worked on the design and promotion of the Norwood Director exposure meter. He is now connected with the DeJur-Amsco Corp., Long Island City, N. Y., and has a wide knowledge of the theory, design, and production of cold light enlargers.



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Salon Calendar

Closing Date	Name of Salon Date of Exhibition	For Entry Blank Write to
May 16	1951 Shropshire Salon of Pictorial Photography. The Art Gallery, Borough Library & Museum. June 16-July 7.	G. W. J. Newey, Shropshire Phot. Soc., St. Quentin, Porthill Dr. Shrewsbury, Eng.
May 25	1st New York State Museum Salon of Flower Photographs. June 1-July 31.	W. J. Schoonmaker, New York State Museum, Albany 1, N.Y.
June 4	★Memphis Pictorialists Salon. Brooks Art Gallery. July 1-28.	Mrs. Louise Clark, Brooks Art Gallery, Overton Park, Memphis, Tenn.
June 16	21st Midland Salon of Photography. The Art Gallery, Wolverhampton. July 28-Sept. 1.	R. Cleaver, 14 The Mount, Cheylesmore, Coventry, England.
June 30	★3rd Hawaii International Color Slide Exhibit. Honolulu Academy of Arts and the Library of Hawaii. July 16-19.	H. E. A. Jamian, 2551 Manoa Road, Honolulu, Hawaii.
July 10	★4th Annual Hartford International Salon of Photography and Color Slide Exhibition. Wadsworth Atheneum. August 1-31.	Raymond J. LeBlanc, 234 So. Quaker Lane, West Hartford, Conn.
September 5	★Northwest Photographic Salon (International), held by Western Washington Fair and Washington Council of Camera Clubs. September 15-23.	Western Washington Fair Assoc., Pullup, Washington.

★follows P.S.A. recommended practices.

Modern PHOTOGRAPHY'S Book Department

All of the books listed here are recommended by the Editors of Modern Photography for their information and entertainment value.

Handbook of Basic Motion Picture Techniques by Brodbeck.

1 With this basic handbook, every amateur motion-picture cameraman can improve the quality of his films, for here are the simple techniques which make the difference between unskilled and professional movie-making. The mechanics of operating the motion-picture camera are thoroughly explained with invaluable data on cameras, films, lenses, focus, filters, exposures, depth of field, cutting, etc. Supplementing the text are more than 100 film sequences, photographs and drawings. \$5.95

Say It with Your Camera by Deschin.

2 This is the first presentation in book form of how to use photographic techniques for maximum personal expressiveness. The book tells how to achieve meaning with the camera; how to interpret subject matter through personal feeling and understanding. Tells how mood, light, form and shape, pattern, texture, and so on can be more meaningful in photography when used with imagination and with understanding of what is being photographed. \$3.50

3 Universal Photo Almanac, 1951 Edition. 260 pages of vital information for photographers, amateur and professional. Articles, formulary, Market Guide for saleable photographs, data, etc. \$1.75

The Model by William Mortensen.

4 Figure work and portraiture receive the most emphasis in this book devoted to the direction and posing of models. Special chapters deal in detail with the head and shoulders, torso, legs and feet, hair arrangement, costumes, and props. Illustrated throughout with both photos and drawings. \$5.50

5 Kodachrome and Ektachrome by Fred Bond. The first and only complete working guide on everyday problems in Kodachrome, Ektachrome, and Kodacolor photography for stills and movies. Illustrated with diagrams, drawings, black-and-white pictures, and full-page color pictures. \$7.50

Handbook of Photography by Henney and Dudley.

6 A thorough exposition of the technique of the photographic process and the scientific basis underlying photography and its applications. While discussions and data relating to the most technical aspects of photography are made available, at the same time the editors preserve a fundamental why and how approach to all subjects, so that all photographers, amateur or professional, can find in it information at their level of work, suitable for practical use. \$8.50

Color Photography for the Amateur by Henney.

7 Good color photography is now within the reach of every amateur due to the great strides that were made during the war in the improvement of color film, lenses, developing and printing processes. In a complete and thorough revision of this popular book (the first edition went into 9 printings) Mr. Henney tells camera enthusiasts—both amateur and professional—all the details of color work and finishing processes. \$5.00

Lighting Ideas in Photography by Herrschfeld and Deschin.

8 Furnishes the amateur with practical methods for achieving interesting and unusual lighting effects and provides him with a helpful code system for recording the results. \$3.50

Making Your Photographs Effective by Lucas and Dudley.

9 Handy, working manual of everyday photography for the professional and amateur alike, fully discussing fundamental photographic operations from the practical rather than the theoretical or technical side, and containing numerous hints, short cuts, suggestions, how-to-do-it ideas and examples which the photographer can apply directly to his own work to make more effective pictures. \$6.00

The Twin-Lens Camera Companion by Newcombe.

10 Basic photography geared to the twin-lens reflex; with advice from 10 American pros. \$3.75

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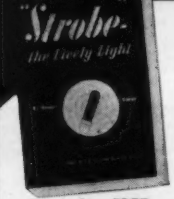
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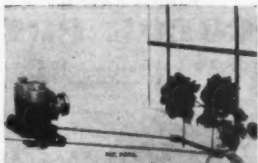
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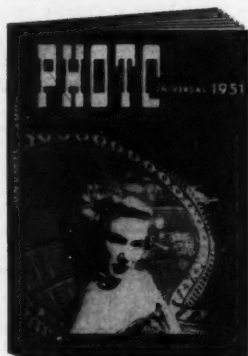
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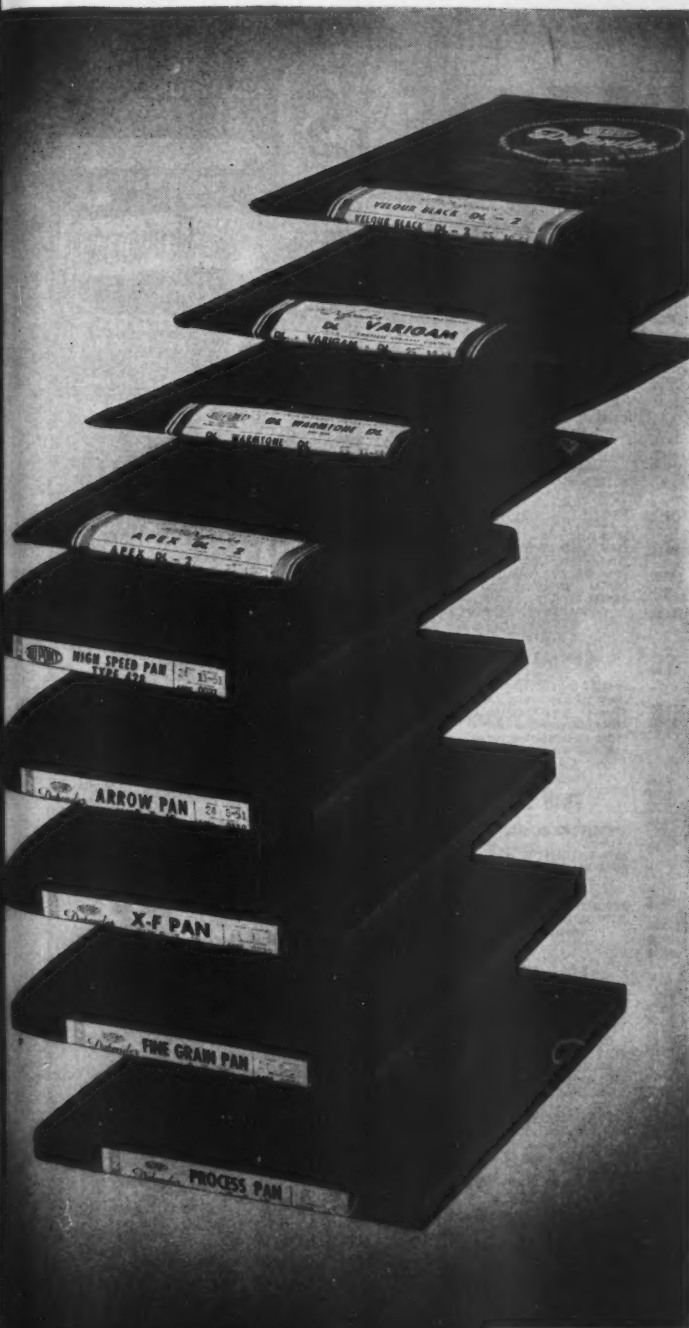
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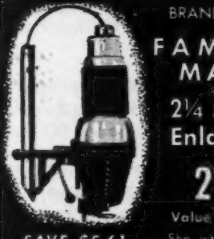
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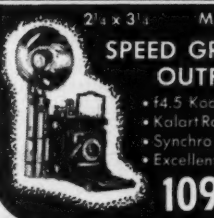
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RF Built-in coupled rangefinder assures quick, accurate distance setting. No guesswork.

SLIDE PROJECTORS

	NEW	USED
ARGUS 100W PA100, 2x2	18.95	
ARGUS 200W PA200, 2x2	21.95	
GOLDE HUMANUMATIC, 2x2, 300W, blower	54.50	39.50
GOLDE REFLEX 2 1/4 x 2 1/4, 300W	74.00	49.50
LABELLE AUTOMATIC "500"	91.35	59.50
VIEWLEX AP-3, 150W, 2x2	10.00	19.95
Average Shipping Weight	10 lbs.	

ENLARGERS

	NEW	USED
ELWOOD S-2 Professional 5x7	78.40	54.50
FEDERAL 135, 35mm, f4.5, condenser	95.90	37.50
SIMMONS OMEGA B-4, up to 2 1/4 x 3 1/4, double condensers	118.00	79.50
OMEGA B-2 complete with f4.5 lens, condensers, negative carrier	229.50	149.95
Average Shipping Weight	50 lbs.	

8mm CAMERAS

	NEW	USED
B & H FILMO SPORTSTER, f2.5	109.95	59.50
B & H AUTO-8 Magazine loading, 2 lens turret, f11.9 1/2", and 1 1/2" x f13.5 tele lens	284.15	179.50
REVERE RANGER, f12.5	74.50	37.50
CINE KODAK RELIANT, f12.7	78.00	37.50
Average Shipping Weight	9 lbs.	

8mm PROJECTORS

	NEW	USED
BELL & HOWELL REGENT, 500W	159.95	99.50
DeJUR "750", still and reverse	149.50	89.50
KEYSTONE K-100, 750 Watts	129.50	79.50
KODASCOPE 8-33, 500 Watts	65.00	44.50
REVERE 90 DeLuxe	144.50	79.50
Average Shipping Weight	25 lbs.	

16mm CAMERAS

	NEW	USED
CINE KODAK B, f11.9	49.50	
BOLEX H-16, latest model, f11.9	283.50	189.50
CINE KODAK MAGAZINE, f11.9	109.50	
SIMPLEX Pockette f2.7	49.50	
Average Shipping Weight	15 lbs.	

16mm PROJECTORS

	NEW	USED
B & H SHOWMASTER 750W	285.95	189.50
KODASCOPE 16-10, 750 Watts	129.50	79.50
KODASCOPE 16-20, 750 Watts	129.50	
REVERE 48, latest, 750 Watts	167.50	89.50
Average Shipping Weight	35 lbs.	

EXPOSURE METERS

	NEW	USED
CHRONOS featherweight	24.95	17.95
NORWOOD DIRECTOR	31.95	19.95
GENERAL ELECTRIC DW-58	14.95	
GENERAL ELECTRIC DW-68	24.90	16.95
GENERAL ELECTRIC PW-1	32.50	19.95
WESTON MASTER II	32.50	19.95
DEJUR 50	15.50	8.95
Average Shipping Weight	3 lbs.	

All items offered subject to prior Sale! New merchandise shipped postpaid; for others, add postage and insurance. PRICES SUBJECT TO CHANGE WITHOUT NOTICE

35mm CAMERAS

	NEW	USED
AGFA KAROMAT II, f12 Xenon		99.50
ARGUS C3 OUTFIT, f13.5, RF with flashgun and Deluxe case	66.50	44.50
BOLSEY B, f13.2 RF	61.50	39.50
KODAK RETINA IIB f12" RF		119.50
KODAK PONY 135, f14.5"	34.75	23.50
STERN REALIST f12.5" RF	162.50	124.50
ZEISS IKONTA 35, f12.8" RF Tessar, bit-in exp. meter	195.00	137.50
LEICA B, f3.5 Elmar, RF		89.50
LEICA IIA, f2 Summar, RF		139.50
LEICA IIC, f2 Summar, RF	350.00	229.50
LEICA IIB, f2 Summar, RF	350.00	
CONTAX II, f2 Sonnar, RF		149.50
CONTAX IIA, f12" Sonnar RF	405.00	265.00
Average shipping Weight	6 lbs.	

LEICA AND CONTAX ACCESSORIES

	NEW	USED
IMARCT Universal Finder	49.00	34.50
35mm f3.5 Summaron W.A.	123.29	84.50
85mm f2 Sonnar telephoto		199.50
OMNICA Deluxe Fitted Case for Camera, Lenses, Accessories		
CONTAX Model	49.50	
LEICA Model	49.50	
Average Shipping Weight	5 lbs.	

TWIN LENS REFLEX

	NEW	USED
ROLLEICORD IIB, f13.5" Synchro		99.50
AUTO ROLLEIFLEX II, f13.5		139.50
AUTO ROLLEIFLEX Synchro, f12.8" Zeiss Tessar, Sports-finder	310.00	229.00
ANGOFLEX EF f14.5" Anast.	68.50	39.95
ZEISS IKOFLEX, f3.5 Zeiss		99.50
Average Shipping Weight	8 lbs.	

ROLL FILM CAMERAS

	NEW	USED
ANSCO TITAN 2 1/4 x 2 1/4, f14.5"	69.50	39.50
POLAROID One-Minute Camera	89.50	64.50
VOIGTLANDER BESSA 2 1/4 x 3 1/4, f5.5 RF		99.50
ZEISS SUPER IKONTA A, f3.5 RF		89.50
ZEISS SUPER IKONTA B 2 1/4 x 2 1/4, latest, f12.8" RF, film stop	232.00	149.50
MONITOR 620, 2 1/4 x 3 1/4, f4.5"		39.50
KODAK MEDALIST, f13.5 Super-matic		99.50
VOIGTLANDER BESSA 68, 2 1/4 x 2 1/4, f3.5		44.50
Average Shipping Weight	8 lbs.	

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with coated Schneider Radionar lens and built-in flash

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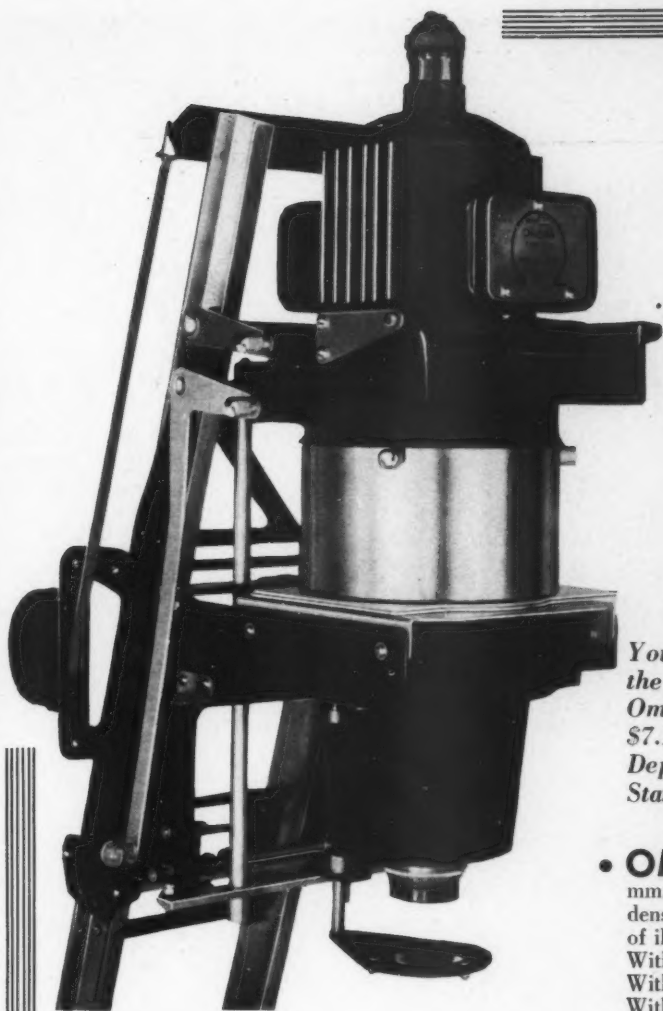
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